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Long, Jeanette L.;Quisenberry, M. Ellen.



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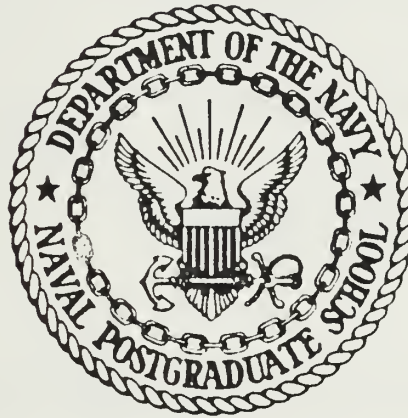






# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



# THESIS

THE RELATIONSHIP BETWEEN THE KNOWLEDGE BASE  
NEEDED FOR EFFECTIVE PERFORMANCE BY NURSE  
CORPS OFFICERS IN MANAGEMENT POSITIONS AND  
THE KNOWLEDGE BASE GAINED IN THE MANPOWER,  
PERSONNEL AND TRAINING ANALYSIS PROGRAM AT  
NPS AND SELECTED NURSING ADMINISTRATION  
PROGRAMS UTILIZED BY THE NAVY NURSE CORPS

by

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and

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December 1986

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Effective Performance by Nurse Corps Officers in Management  
Positions and the Knowledge Base Gained in the Manpower,  
Personnel and Training Analysis Program at NPS and Selected  
Nursing Administration Programs Utilized by the Navy  
Nurse Corps

by

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## ABSTRACT

This study surveyed Nurse Corps Officers in management positions by means of a questionnaire to ascertain the relationship between skills gained in Manpower Personnel and Training Analysis or in civilian Nursing Administration programs and Navy Nurse Corps job component needs. Survey respondents were asked to rate their utilization, capability and level of importance for 32 activities that form the basis of either the MPTA or civilian Nursing Administration programs, and that might be required in a particular Nurse Corps management position.

The study defines which activities are of greatest and least importance to Nurse Corps managers and where these activities may be obtained. The research indicates that the educational needs of Nurse Corps Officers in management positions may be met in MPTA or in the civilian Nursing Administration programs studied. However, several adjustments are recommended.

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## I. INTRODUCTION

Since we began our studies at NPS, many have asked the question, "Why are nurses attending the Naval Postgraduate School (NPS)?" In answering this question, we often found ourselves discussing what we felt were the educational needs of managers in the Navy Nurse Corps and where these educational needs might be met--at NPS, in the more traditional nursing administration programs, or through other means. Thus our thesis evolved with the question being, "What is the relationship between the knowledge base needed for effective performance by Nurse Corps Officers in management positions and the knowledge base gained in the Manpower, Personnel and Training Analysis Program (MPTA) at NPS and selected Nursing Administration programs utilized by the Navy Nurse Corps?" As a means of answering our question, we developed a survey of Nurse Corps Officers in management positions. Although many of the survey questions were stimulated by a review of literature or pre-survey interviews of Nurse Corps graduates of MPTA or Nursing Administration, the questions were primarily drawn from our examination of the course content of the two programs. The survey design and implementation will be discussed in a later chapter.

Through this thesis we hope to demonstrate the relationship between nursing and management. We will explore educational opportunities available to Navy nurses as well as educational needs of nurse managers.

Three major components served as the basis for our survey instrument. These components were a review of literature, interviews of graduates of MPTA or Nursing Administration Master's Degree programs, and curricula review of the MPTA program and Nursing Administration programs utilized by the Navy Nurse Corps. Chapter I provides an introduction, background information, results of our preliminary interviews, and a review of literature to determine state-of-the-art views on educational needs of nurse managers and why they are needed by the Navy Nurse Corps. Chapter II is a review of the MPTA curriculum and many of the Nursing Administration Master's degree programs utilized by the Navy Nurse Corps. This review identifies how educational components gained through civilian Nursing Administration Master's Programs differ from those gained through MPTA at NPS. The survey design and population is discussed in Chapter III with results and analysis described in Chapter IV. Chapter V delineates our conclusions and recommendations.

#### A. BACKGROUND

In a review of the focus of postgraduate education for nurses, Cleland relates significant historical points. Late

in the 1960's, graduate schools in nursing began to shift their focus. Acting on the recommendations of the Surgeon General's Consultant Group on Nursing, their focus became clinical practice and the development of nursings' body of knowledge. However, as the complexity of the medical system grew, it became increasingly evident that nurse specialists could not exert major influence upon the quality of care within the institution only on the basis of personality and personal expertise. As Cleland relates, the word then went back to graduate schools that nursing practice expertise was essential but not enough--a clinical specialist needed administrative skills to be successful in a service organization. [Ref. 1:p. 24]

A review of the literature reveals divergent views on the type of skills nurse managers require. As Del Bueno and Walker noted:

What knowledge, skills, and experiences do effective managers need? While there is growing agreement that nurses in management positions ought to have special preparation and training for their roles, there is far less agreement on how such preparation should be provided. [Ref. 2:p. 7]

One thing is certain though, all experts/observers agree that nurse managers need higher education. For example, Bruzek-Kohler and Carpenter relate that in nursing, while tradition has been that management promotion was based on clinical expertise, positive personality traits and years of experience, nursing schools and nursing administration have provided only minimal or outdated formal management



training. In their view, the trial and error approach is no longer satisfactory for the nursing managers who must deal with the complexities of the changing health care system and the changing of the nursing profession itself. [Ref. 3:p. 30]

In more specific terms, Cleland asserts that students preparing for administration must learn concepts, skills, perspectives and techniques from the world of management so that they may learn to defend what is good from their own experience and incorporate what is new and worthwhile into their own thinking [Ref. 1:p. 28]. Bruzek-Kohler and Carpenter add that nurses need to expand their repertoire of management techniques by looking to their colleagues in the business world and incorporating some of those techniques into successful programs. In their view, management training ideas in the business world can work for nursing as each level in nursing has a counterpart in industry--charge nurses and line managers, nursing supervisors and middle managers, senior nursing executives and senior executives. [Ref. 3:p. 30]

Based on our own assessment and that of many of our interviewees, today's military medical environment may be described as ever-changing. Many forces and pressures contribute to this environment--advanced technology, increased complexity of patient care, defense expenditures and the pressure to keep down costs, preparing nurses for

routine as well as war-time scenarios in patient care, fluctuations in staffing and the need for creative scheduling, increased accountability through quality assurance, as well as both military and civilian inspections and evaluations. External and internal forces daily challenge the nurse manager and she/he must be armed and ready to restructure and revitalize nursing service. Today's nurse managers must deal with all changes and be prepared to coordinate, integrate, and collaborate internally within nursing services and externally throughout the medical command and community it serves. These positions require communication skills, flexibility, and an understanding of the organization and related behaviors.

Graduate education is seen by all commentators as the path to this end. In this context, Mark and Larson identify that there are primarily two positions regarding the education of a nurse manager. One is that the nursing manager must have strong management skills as well as strong clinical skills to be credible with both hospital management and nursing staff. This is achieved by a degree in Nursing Administration. The other position is that the appropriate degree is a Master's in Business Administration or Master's in Health Care Administration offered in schools of business or health administration. For these programs, given the global responsibilities of the role, strict training in

business or health management is required with no additional coursework in nursing. [Ref. 4:p. 29]

## B. REVIEW OF LITERATURE AND INTERVIEWS

To identify essential educational components for the Navy Nurse Corps Manager and assist with the development of our survey of nurse managers, we conducted interviews of graduates of both the MPTA curriculum at NPS and Nursing Administration programs. Further research was done by review of current literature. The literature review and interviews are discussed in the remainder of this chapter.

Many of our interviewees defined knowledge in strategic planning and management as essential to nurse management. Their views are shared by Beyers, who discusses the author Ohmae and his book, The Mind of the Strategist:

He writes that strategy involves a clear understanding of the elements of the situation, restructuring the elements in the most advantageous way, and finding the best possible solution to the problem at hand. Ohmae describes strategic thinking as a combination of rational analysis based on the real nature of things (concrete phenomenon) and imaginative reintegration of various elements into new patterns. The strategist achieves superior performance by evaluating the strategic three C's: the corporation, the competition, and the customers. Flexible thinking is needed to analyze selected approaches and weigh their costs and benefits. In his view, strategic thinking preconditions one for creative insight. In this thinking one knows the reality (sense of the limits, points of leverage), timing (know when the time is ripe), and resources (have the appropriate resources and use them to best advantage). [Ref. 5:p. 33]

Yet another view is provided by Bopp and Hicks:

Strategic management is a process that deals with (a) organizational renewal and growth, (b) mission review and revision, (c) development of strategies, structures, and

systems necessary to achieve such renewal and growth, and (d) organizational change processes needed to manage strategy formulation and implementation effectively. Strategic management is a problem-solving process directed at determining new, preferred linkages between the organization and its environment. Strategic management involves realigning the organization's structure, systems, style, staff, skills, and shared values to support the organization's new linkages with its environment. [Ref. 6:p. 93]

Beyers also asserts that organizational maintainers can no longer function effectively in top management. Effective executives are thinking in terms of strategy; thus nurse executives are becoming strategists. These managers know they must develop a sense of the whole organization and recognize that changes in any segment of an organization affects the others. Nurse managers who are integrated into top management are influential in initiating changes in nursing services as they relate to the total command. This integration allows the nurse managers to have input into financial and human resource planning and into utilization of technology to more completely meet the objectives of the organization. [Ref. 5:p. 33]

According to Beyers, Mintzberg has defined five components of organizations--strategic apex (top management), technostructure (staff analysis to design a system, conduct formal planning and work control), operating core (those who perform the work), the middle line (managers between the chief executive officer and the workers), and the support staff (those who provide services and resources needed by the rest of the organization). [Ref. 5:p. 34]



Referring to Mintzberg's organizational components, Beyers notes that:

. . . it is clear that nursing fits into each component: the strategic apex where the organizational mission is decided, the technostructure where systems and formal planning are designed, the operating core where nursing practice takes place, the middle line where nurse managers are responsible for divisions and units function, and the support staff needed to make the system work. [Ref. 5:p. 35]

The next educational component desired is leadership and management. Player relates that nurses must be able to define goals and establish objectives; they must be able to understand, enter, and compete within the systems of management. [Ref. 7:p. 52] Most interviewees stated that skills are needed so that our nurse managers can learn and integrate techniques for managing our people and our resources in the most efficient way.

Price asserts that nursing managers influence the largest proportion of hospital budgets [Ref. 8:p. 16]. In Price's view, this requires knowledge and skills in accounting, budget and finance;

Nurse managers need to be much more savvy in the business world, they need to know the language of the finance officer and they need to become more skillful in marketing and strategic planning. We can no longer submit budgets and expect to have them funded just on the basis of our concerns. Our concerns and our needs have to be documented and our nurse managers now are seeking preparation to be qualified to do those kinds of things. [Ref. 9:p. 27]

Recognition of the nurses' role in financial management also was an oft-mentioned objective. Several interviewees

believe that perhaps the time has come that Nursing Service should maintain its own budget and be prepared to justify it. They affirm that Nursing Service supports the largest staff contingent within a hospital and utilizes a significant proportion of equipment and supplies. Without the authority of budgetary control and the accountability that comes with responsibility, nursing is left to function at the hands of several other departments.

As Cleland notes:

Fiscal accountability is no longer based upon personal integrity but instead upon 'generally accepted accounting procedures.' Knowledge of accounting theory enables the manager to search for and demand accommodation. [Ref. 1:p. 25]

Price states that nurse managers also are heavily involved in policy and decision making. They must assume responsibility for managing Nursing Service activities and work with other disciplines to deliver quality patient care. [Ref. 8:p. 11] This requires nurse managers to be well versed in major management theories and to be able to share the information and to implement programs based on solid background and conceptual understanding. Several interviewees assert that this also requires knowledge and understanding of organizational theory, policy-making, policy analysis, and productivity. In their view, these managers must understand the systems within which they work; they must know how to get an idea through the system and how to communicate with other systems.

The majority of our interviewees identified Public Policy Processes as an essential component of their post-graduate education. Knowledge of public policy processes provides a framework for a critical examination of the federal budget process as it impacts upon the Department of Defense.

Manpower planning also appears to be an essential feature of the job of a nurse manager. Our interviewees told us that increased reporting requirements documentation, patient care planning, and diminished staff have forced many changes upon the system. Many nurses still do not understand the important features of manpower rules and policies. The military nurse manager has an increased need for conceptual understanding of manpower issues within the military system. The military nurse must deal with billet structure, coding, and organizational aspects of staffing. One interviewee expressed the need for knowledge in job analysis and job design to facilitate the most appropriate determination of manpower requirements.

Beyer describes another facet of the role of a nurse manager, the utilization of the concept of forecasting--making determinations about the future. This involves projections about demographic changes, evolving or developing technology, and societal values about health and health care. In this context, the nurse manager may learn to think beyond the present by developing scenarios based on concepts

of forecasting. In Beyers' view, this encourages the nurse manager to have an open mind and to develop a sense of control over uncertain and unknown future events that affect the delivery of patient care. [Ref. 5:p. 38]

Health care policy and administration courses offer the nurse manager exposure to and understanding of the broader picture of which nursing service is a component. As defined through our interviews, these courses provide understanding of all components and the interaction necessary to make the entire system work well. Understanding of priority setting and perspectives into the changing health field provide the nurse manager with increased abilities within her/his position.

As Player writes:

Nursing managers in administration and education must look realistically and sensitively at economic issues--salaries, benefits, practice climate and professional stature. The future of nursing belongs to those who prepare for it. Nursing leaders must prepare for it now. [Ref. 7:p. 53]

The present economic pressures are strong. Interviewees assert that a firm grasp of these pressures and the causality behind them facilitates dealing expertly with these pressures and allows a more intelligent approach to economic decision-making including financial and budgetary considerations, labor market changes and utilization of resources. Or, as Cleland states:

Economics is the common denominator for all management decisions, and nurse administrators are handicapped if they are not adequately prepared for this. [Ref. 1:p. 27]



The interviewees also told us that effective communication is often a forgotten or neglected aspect of education, yet so vital in daily nursing operations. In addition, one interviewee focused on the need for Navy Nurse Corps Officers to become adept in technical writing skills. Taylor and DeSimone echo this view. As they have written:

Communication is probably one of the most integral parts of a management position. The quality that enables a manager to be effective--communication--is unique in that it is intangible. The ability to change communication styles to meet the needs of the situation is sought after by all those who realize its importance. Communication is the essence of management--getting the job done, solving problems, giving recognition and planning for the future. The business language of nursing is identical to the business language of other professions and industries. To communicate effectively, nurse executives must be educated in the major business administration areas: business law, economics, finance, accounting, marketing and management. Theories and principles of management are as applicable to nursing administrators as they are to any manager. [Ref. 10: pp. 22-26]

A background in probability and statistics also was defined by several interviewees to be quite important. Statistical knowledge enables a Navy nurse manager to make a point or to analyze someone else's and to be more attuned to what is wrong. This background helps to show logically how today's decision will impact on tomorrow. A few interviewees discussed the importance of concepts gained through multivariate statistical techniques. This provides the individual with equation formulation and processes for solving manpower requirements and forecasting.

Yet another concern has been expressed by Zaler, Welches and Walker who believe that nursing research is important to

the nurse manager. In their views, nurses need the opportunity and resources to study the problems they encounter and to test ways to effect change, thereby expanding their knowledge. [Ref. 11:p. 37]

Expressing yet another concern, Carpenter relates that today's increased technology requires an understanding and utilization of management information systems and automated data processing. Nursing administration information is necessary to manage the daily operations of the department. Nursing management planning and control information is needed to assist in middle and long term decision making. In Carpenter's view, there is an abysmal lack of nurse input in hospital administrative and clinical ADP development and this cannot continue. If it does, nursing will be forced to use tools designed by others based on their perspective of nursing's needs. [Ref. 12:p. 18]

Interviewees also felt that there is a need for ADP knowledge, and they cited the many uses for automated systems: determining staffing requirements, scheduling, in-service education records, budget information and status, and quality assurance programs and results, to name only a few.

In sum, the many commentators and interviewees agree that essential educational needs for the Navy Nurse manager are many and diverse. In their collective views, skills such as decision making, communication, priority setting, assertiveness, finance and budgeting are vital. Furthermore, for

nurse managers to function successfully, they must understand and apply economic and political aspects of management, complex managerial and organizational theories and labor and human relations. A working knowledge of MIS, ADP and research are also critical components for the nurse manager.

## II. CURRICULA REVIEW

In addition to the review of literature and interviews of Navy Nurse Corps Officers with graduate education, a curricular review of the MPTA program and sixteen Nursing Administration Master's degree programs was done. This curricular review is the third component utilized to develop our survey. A secondary feature of this review is to provide the basis for a comparative description of the two programs.

### A. MANPOWER PERSONNEL AND TRAINING ANALYSIS PROGRAM

A graduate of the MPTA curriculum receives a master's of science in management and a subspecialty code of XX33P. The XX33P Subspecialty is responsible for developing and analyzing policies to ensure that the Navy is recruiting, training, utilizing, and retaining personnel in the most efficient and effective ways possible. MPTA subspecialists are tasked with meeting the critical Navy problems of today, such as manning an all-volunteer 600-ship force, reducing budget deficits and increasing management efficiencies within the Navy. The MPTA curriculum prepares students to fill leadership roles in military manpower management, and to perform and evaluate manpower policy analysis. [Ref. 13]

MPTA is an analytical curriculum which emphasizes mathematical and statistical methods. Recent changes in the



curriculum have increased the quantitative as well as economic focus of the program and have provided a greater emphasis on the use and application of computers. These changes were due to the Navy's increased reliance on quantitative analysis to support policies and programs.

[Ref. 13]

Revisions have been made in the actual courses taken and the specific educational skill requirements (ESR's) of the MPTA curriculum to reflect both immediate and long-range goals of the Navy. ESR's are functional objectives that describe those elements of the MPTA subspecialty considered necessary to perform properly in a billet. ESR's are provided by the various curriculum sponsors in conjunction with NPS, and form the basis of the course content.

The MPTA curriculum content is driven by six ESR's of the sponsor, Office of the Chief of Naval Operations (Op-01), These six ESR's are as follows:

1. An understanding of the basic application of the social sciences to the effective operation of organizations and the behavior of the individuals who work in them.
2. An ability to apply contemporary basic management principles and fundamentals to a broad range of situations.
3. An ability to use and understand basic mainframe and micro computer systems in problem solving and analysis efforts, especially as they relate to existing and proposed computerized management information systems within the Navy and Department of Defense.
4. An understanding and ability to apply a range of quantitative techniques to the analysis and study of major generic problems in MPTA areas.

5. An understanding and ability to evaluate the usefulness of general quantitative models in MPT requirements determination, recruiting, retention, planning, programming, and budgeting.
6. An ability to analyze the strengths and weaknesses of proposed basic MPT policies and to develop alternatives which recognize the potential long and short run impacts on the full range of Navy programs, goals and organizational components. [Ref. 14]

The MPTA curriculum has two components that strive to meet these ESR's listed above. These include Core courses that are similar to all curricula in the Administrative Sciences Department and specialty courses that are specific to the MPTA curriculum.

Both the Core and specific MPTA courses are listed in Table 1, with specific descriptions located in Appendix A. The entire 1986 curriculum matrix that the researchers followed while attending NPS is described in Appendix B.

The MPTA program is 18 months in length and requires 102 total quarter hours, 80 being graduate hours and 12 hours which are allotted for mandatory thesis work. The first quarter contains 13 credit hours of undergraduate courses which are the backbone for the specialty courses taken later.

The MPTA program provides experiences that are different from most civilian programs in nursing administration. The program is located at the Naval Postgraduate School, Monterey, California; and the MPTA students attending are mainly line officers from the Navy, Army, and Air force. This gives the Nurse Corps Officer the opportunity to share

## TABLE 1

### MPTA CURRICULUM COURSES

#### MPTA CORE COURSES

Economics  
Accounting  
Organizational Systems  
Managerial Communication  
Operations Research  
Public Policy Processes  
Policy Analysis

#### MPTA SPECIFIC COURSES

Seminars in MPT issues  
Personnel Processes  
Multivariate Manpower Data Analysis  
Manpower Economics  
Applied Manpower Analysis  
Manpower and Personnel Models  
Productivity Analysis  
Manpower Policy Analysis

ideas, strategies and expertise with non-medical colleagues. The educational environment at NPS allows Nurse Corps Officers to build a close network of potential sources of information and cooperative liaisons. Additionally it gives them an excellent background in Department of Defense specific issues and in the actual operational climate of the U.S. Navy.

#### B. NURSING ADMINISTRATION PROGRAMS

The curricular contents of 16 graduate nursing administration programs which are currently being utilized by the Navy Nurse Corps for Duty Under Instruction, also were analyzed. The graduate schools of nursing that were

reviewed are listed in Appendix C. For the programs, we attempted to identify the common components and educational preparation emphasized in each program, as well as similarities to the MPTA curriculum.

Unlike the MPTA curriculum, the Nursing Administration programs are designed to prepare Nursing Service Administrators whose major responsibility is administration of the resources required for the provision of nursing care goals. The curricula prepare nurses at the master's level in health care systems, administration, human relations, theoretical formulations relevant to nursing and research into the practice of nursing service administration. The programs focus upon the achievement of professional nursing goals consistent with nursing care standards at a cost compatible with the resources of the health care system.

Nine of the curricula reviewed have prepared well-defined philosophies and goals. These philosophies and goals help to describe the focus and curriculum content of each school. These nine are described throughout the remainder of this chapter.

The University of Alabama uses an interdisciplinary curriculum model as a basis of its program. The learning plan evolved from the interdisciplinary model and is based on the following assumptions:

1. The graduate in Nursing administration must be highly skilled and knowledgeable about the discipline of nursing.



2. Because the nurse administrator must work collaboratively with the administrative staff and interpret how nursing services fit into the total health care system, the graduate must be knowledgeable about health care systems.
3. A competent nurse administrator is a member of the administrative staff or management team for a health care agency and participates in the formulation of agency policies. Therefore the graduate must possess knowledge and skills of administration.
4. The nurse administrator is accountable for furthering the personal and professional development of the nursing staff, and for creating an environment within nursing service that fosters the delivery of quality patient care. Thus, the graduate must be a human relations expert to work with and through people to achieve health care goals. [Ref. 15]

The overall purpose of the Nursing Administration program at University of California, San Francisco is to prepare leaders for management positions at various levels within multi-unit health care organizations, including hospitals, ambulatory units, home health care, community health, mental health, and occupational health care settings. [Ref. 16]

The faculty at the University of Maryland School of Nursing believe that educational preparation for the administrative role must equip the nurse to analyze, design, organize, manage and evaluate the systems through which nursing care is delivered and to maintain an environment conducive to excellence in nursing practice. Similar to the MPTA curriculum, the program provides a strong foundation in organizational theory and financial management. However unlike the MPTA curriculum, it includes courses concerning

the socio-political, economic and clinical issues in health care; in addition to knowledge and skills in research, leadership and nursing. [Ref. 17]

The University of Maryland offers an optional certificate in General Administration which focuses on theories and skills involved with human resources management. Topics covered in the program include methods and conduct of organizational assessments, long range planning, organizational communication, budgeting and resource allocation, leadership and organizational decision-making. [Ref. 17]

The University of South Carolina's program is founded on the philosophy that the nurse administrator has a strong conceptual base in nursing practice and draws on the theories of administration, organization, leadership, and systems theories to direct nursing within organized health care settings. The curriculum focuses on nursing, business, health, and public administration theories. [Ref. 18]

The University of Washington's program in Nursing Administration with a minor in Business is designed to provide students with a broad base of knowledge and skills in nursing administration and management, and to provide practical experience in a nursing leadership position. Similar to the MPTA program, it provides students with knowledge and skills in four major areas: administration of systems, leadership, administration decision-making, and evaluation. The nursing administration student is expected

to acquire advanced knowledge and skills associated with these four major areas and to understand the interrelationship between them. [Ref. 19]

Paralleling the MPTA curriculum, Emory University's program integrates emerging concepts in organizational development, budgeting and finance, strategic planning, risk management, information processing, and legal aspects throughout the course of study. Beginning in Spring 1987, Emory will offer a joint Master's of Science in Nursing Administration and Master's in Business Administration and will prepare students in the fundamentals of nursing administration, business, management, problem solving and research. [Ref. 20]

The University of Pennsylvania School of Nursing believes the need for well prepared nurse executives is obvious. In hospitals, the nursing department comprises one-third to one-half of the institution's human and budgetary resources. Nurses who will assume top management positions not only need a sense of vision regarding the profession of nursing and an understanding of the scientific base of the discipline; but they also need a sound and thorough grounding in management science. [Ref. 21]

Both curricula at Marymount College [ref 22] and the Medical College of Virginia [Ref. 23], as well as the MPTA curriculum, emphasize courses in management, organizational theory, financial management and information systems. The

focus of both programs is theoretical as well as experiential and seeks to promote the integration of administration and nursing theories.

The increasing complexity of health care organizations, the rapid development of scientific knowledge and its associated technology all intensify difficulties in decision-making regarding utilization and delivery of nursing and health care services. Consequently, most of the schools reviewed state that the Nurse Administrator role demands the synthesis of theories from the fields of nursing and management that will guide the practice of nursing administrators.

The majority of the programs studied also stress the application of relevant concepts and theories to implementation of the roles of administrator, researcher, teacher, consultant and clinician. The administrator's role is the essence of Nursing Service Administration practice. To perform this role effectively, knowledge is needed in nursing, health care systems, administration, human relations, research consultation and teaching and the incumbent must be able to plan, organize, direct and control available nursing resources. Further, the Nursing Service Administrator uses appropriate theoretical constructs to assess the influence of forces internal and external to the organization upon the achievement of the nursing goal of quality client care.



Over one-half of the nursing administration programs collaborate directly with schools of business or Health Services Administration and all but two mandate courses related to business or health care administration. University of Washington, Emory University, University of South Carolina are planning or are already offering a minor in business administration with the master's in Nursing Administration. University of Maryland offers additional courses in order to gain an optional certificate in General Administration. The programs under study range in length from one to two years, with the majority being two years. They range from 36 to 65 semester hours and from 51 to 72 quarter hours.

The curricula content of all 16 nursing administration programs fell into 18 major categories. Appendix D delineates these courses and shows the schools in which they are offered.

### C. CURRICULAR COMPARISONS

We identified five major curriculum components that were common in most all civilian graduate programs that specifically prepare nursing service administrators. These components are specifically addressed in our survey and consist of courses concerning nursing theory, nursing management strategies, nursing research, health policy, and accounting applied to health care institutions. There are several components of Nursing Administration programs which



are offered in some curricula as complete courses while in other programs are offered only as a facet of a particular course. This can be seen in Appendix D.

Components that are common to both MPTA and Nursing Administration programs are organizational behavior, general management and accounting/financial management courses. MPTA courses such as statistics, MIS/computer, economics, health policy, personnel resource management , productivity and operations research were found in only a few of the nursing administration programs reviewed. Many of these activities are components of other courses, so we were unable to determine their comprehensiveness.

### III. METHODOLOGY

#### A. SURVEY QUESTIONNAIRE

The study was conducted through the use of a questionnaire designed by the authors and presented in Appendix E. In the Introduction, the questionnaire asked seven non-identifying personal questions; rank, sub-specialty, length of active commissioned service, highest degree completed, current position/title, time served in current position and current duty station.

As a follow-on to the personal questions, thirty-two skills and concepts were listed that form the basis of either a nursing administration or the MPTA program at NPS, and that might be required in a particular Nurse Corps management position under study. These skills and concepts were derived based on review of the literature, interviews with Nurse Corps graduates from the MPTA or Nursing Administration programs and other Nurse Corps Officers holding management positions, and analysis of curricula content.

Four distinct questions with corresponding rating scales were asked of each activity listed. The subjects were asked to indicate to what extent they are currently utilizing each activity, to designate their current capability to perform each activity, how important that activity is for optimal

performance in their current job and how they obtained the ability to perform this activity.

The respondents were first asked to determine the extent they are performing these activities in their current position on a scale using ratings of Not at All, Only Rarely, Sometimes, Moderately Often, Quite a Bit, Almost All the Time or Constantly.

The respondents were asked to judge their capability to perform the listed activities regardless of whether or not they actually use them in their current job. The scale used consisted of the following ratings: Not Capable at All, Extremely Limited, Not Too Good, Fairly Good, Pretty Good, Very Good, or Expert.

The subjects were asked how important they felt that such activities are for optimal performance on their current job. The scale ratings included: Not Needed, Only of Minor Importance, Somewhat Important, Fairly Important, Very Important, Extremely Important, or Essential.

The last question asked the respondents to explain if they had the ability to perform the activity and where did they learn to do it. The scale consisted of: Not Applicable, OJT, Experience, Primary Education, Postgraduate Education, and Other.

Appendix F contains the rationale for using a mail questionnaire as a method of data collection and other considerations for the development of this questionnaire.

## 1. Development of the Thirty-Two Activities

The first activity identified is Nursing Theory. This question was derived based on Nursing Theory courses required in twelve of the sixteen Nursing Administration programs.

Technical writing, is the second activity. This activity was discussed by an interviewee who strongly emphasized the need for such writing skills within the Navy Nurse Corps. This activity is also an integral part of the managerial communication course taught at NPS.

Activity 3, computer programming techniques, was developed from Carpenter's [Ref. 12] assertion that nursing administrators need to understand and utilize management information systems and automated data processing. Additionally, our interviewees defined the need and potential utilization of computer systems. Six nursing administration programs and the MPTA program provide courses in computer skills and techniques.

Nursing management strategies, provided the framework for four activities. They are: (4a) staffing, staff development, patient classification, (4b) nursing organizational structure, effectiveness, evaluation, quality assurance, (4c) nursing service budget, and (4d) labor relations and health law. Carpenter and interviewees discussed staffing in relation to automated systems [Ref. 12]. Our interviewees identified the need for organizational theory and it

is a component of fifteen Nursing Administration programs. Price [Ref. 8], Carpenter [Ref. 12], as well as several of our interviewees discussed the need for knowledge and skills in budgeting. Budget theory for nursing is a subset of courses in fifteen Nursing Administration programs. Labor relations and health law was identified by Taylor and DeSimone [Ref. 10] as being essential for Nurse Administrators and is a component of six Nursing Administration programs.

The organizational management area provides the basis for five activities. They are: (5a) basic management principles, (5b) organizational structure, (5c) Individual and group behavior, (5d) job analysis and (5e) job design. Taylor and DeSimone [Ref. 10] and Player [Ref. 7] and most interviewees discussed the need for basic management principles, organizational structure, individual and group behavior and leadership. MPTA and fifteen Nursing Administration programs provide courses of this type. Job analysis and job design was identified as critical by an interviewee and is found in the MPTA curriculum.

The personnel management area provided the basis for four questions: (6a) acquisition, recruiting, selection of military personnel, (6b) assignment, development, education and training, (6c) retention, compensation, pay level and structure, and retirement and (6d) performance appraisal and



evaluation. These activities were derived from several courses within the MPTA curriculum.

Activity 7 is strategic planning. Ohmae, Beyers, and Mintzberg [Ref. 5], Molen [Ref. 9], and Bopp and Hicks [Ref. 6] and several interviewees cited strategic planning as critical for nurses in top management. Strategic planning is a component of a course offered in MPTA.

Nursing Research, activity 8, was identified by Zaler, Welches and Walker [Ref. 11]. Nursing research is required by fourteen Nursing Administration programs.

Activity 9, computer based statistical analysis, was defined by several interviewees to be quite important. This is required by MPTA and six Nursing Administration programs.

Statistical methods for analyzing manpower problems, activity 10, was identified by interviewees and is a course found in the MPTA program.

Activity 11, health policy, a component identified through interviews, is required by seven Nursing Administration programs and is offered as an elective in the MPTA program.

Accounting, activity 12, was identified by Taylor and DeSimone [Ref. 10] and Price [Ref. 8] as essential to the background for other managerial functions. Accounting as applied to health care is found in fifteen Nursing Administration programs.

The finance and budgeting area provided the basis for three activity questions: (13a) accounting concepts, cost accounting, budget development, (13b) cost-benefit analysis, cost analysis for decision making, capital budgeting, and (13c) resource allocation in the Defense sector, and Defense budget preparation. The need for basic accounting and budgeting skills was addressed in the literature for nursing service as discussed in activities four and twelve. The advanced concepts were viewed as important to the Nurse Corps by the researchers and interviews and are taught in the MPTA program.

Economic decision making, activity 14, as a common denominator for all management decisions was discussed by Cleland [Ref. 1]. Player [Ref. 7] asserted that nurse managers must be on top of economic issues. Taylor and DeSimone [Ref. 10] discussed that an education in economics was necessary for nurse managers to communicate effectively. Many interviewees asserted that nurse administrators must have a firm grasp of economic pressures that influence the health care environment to allow a more intelligent approach to decision making. Economics is found in six Nursing Administration programs and is the foundation and focus of the MPTA program.

Activity 15, market analysis, is a major aspect of several Economic courses taught in the MPTA program.

Problem-solving and decision-making models is activity 16. Beyers [Ref. 5] identified a partial aspect of this activity when she discussed the need for nurse managers to have forecasting abilities. This activity is found in one Nursing Administration program and in the MPTA program.

Activity 17, manpower and personnel models, (18) determining planning variables and (19) determining the short and long term effects of manpower personnel were identified by interviewees as being essential for understanding manpower rules and policies. These activities are gained in the MPTA manpower and personnel models course.

Activity 20, productivity enhancement, was cited by interviewees as an essential feature of systems communication. It is found in one Nursing Administration program and is a course in the MPTA program.

## 2. Exclusions from the Survey

Although our survey addresses most of the points raised in our literature review, interviews, and curriculum reviews, we have excluded several points. For example, Appendix D contains a breakdown of courses taught in the Nursing Administration programs we reviewed. Four courses not addressed in the survey were Role Development, Issues, Nursing Practicum and Nursing Residency. The courses in Role Development and Issues were of a seminar format and not specifically defined so as to identify specific skills or knowledge gained. Nursing practicum and Nursing Residency

varies significantly among schools but primarily provides the student with the opportunity to explore and utilize newly gained knowledge and skills. This opportunity varies greatly from individual to individual and was not felt to be an asset to the survey.

Mathematics for management is a course required in the MPTA curriculum, but not addressed in the survey. This is a preparatory course required for the management degree. We did not feel that it was necessary to address the specific concepts of this course in the survey. Management policy is a second course required in the MPTA curriculum. This is a capstone course which utilizes many of the skills and theories gained in the educational process at NPS. This course also was not addressed in the survey.

Communication skills are addressed by Taylor and DeSimone [Ref. 10] in the review of literature. Technical writing and correspondence was queried in question 2 and was identified as a subset of a communication course taught in the MPTA program. A more specific question referencing communication was not included in the questionnaire because the topic was too broad, involves conceptual thinking and understanding and does not lend itself to a specific question. There were no further exclusions from either the literature review or our interviews.



### 3. Pilot Study

A pilot study was first conducted by Army Nurse Corps Officers at Silas B. Hays Army Community Hospital, Fort Ord, California. The function of this pilot study was to obtain information for improving the survey instrument, and for assessing its feasibility. The pretest provided a means of detecting and solving any unforeseen problems in the administration of the questionnaire, such as the phrasing and sequence of questions and length of the survey. It was also used to indicate the need for additional questions or the elimination of others. It was important for us to know if respondents understood our questions and directions, and to ensure that the questions had the one and same meaning for each respondent before conducting the major study.

Subjects for the pilot study consisted of twelve Army Nurse Corps Officers and possessed the same characteristics as nurses who comprised the main sample. That is, our pilot subjects were chosen from a similar population as subjects for the major study and held positions in middle to top management equivalent to those Navy positions studied.

The questionnaire used for the pilot-study contained all the intended questions presented in the wording, format, and sequence that are indicated for the final survey.

When data from the pretest had been collected and scrutinized, we made revisions and refinements which in our judgment would help eliminate or reduce problems encountered



during the pilot study. Suggestions made by our pilot respondents and subsequent changes made are located in Appendix G. Because extensive revisions were not required, we did not have a second trial run to incorporate the revisions.

#### B. THE SURVEY POPULATION

The questionnaires were mailed to Navy Nurse Corps Officers filling management positions to which the researchers felt nurse graduates of MPTA or Nursing Administration programs might be assigned. A listing of the positions held by the population studied is found in Table II.

TABLE II  
NURSE CORPS POSITIONS SURVEYED

##### A. Within Hospital Commands

- Director of Nursing Service
- Assistant Director of Nursing Service
- Department Heads
- Area Coordinators
- Nurse/Corpsmen Staffing Detailers
- Command and Nursing Quality Assurance Coordinators
- Educational Coordinator

##### B. Outside Hospital Commands

- Nurse Corps Officers at Geographic Commands
- Senior Nurse, Branch Clinic
- Nurse Corps Recruiters
- Nurse Corps Detailers
- Senior Nurse, Corps Schools
- Nurse Corps Officers, NETC
- Nurse Corps Officers, NSHS
- Nurse Corps Officers in 2XXX billets

### C. CONDUCT OF THE STUDY

Prior to the actual mailing, approval to distribute the questionnaires was obtained via the appropriate channels. We then estimated the number of nurse management positions at each Conus hospital and mailed the corresponding number of questionnaires to the Director of Nursing Service, via the geographic regional Commander and the Commanding Officer of the hospital. An endorsement was required from the above authorities before the survey could be distributed to the sample population.

Packages containing 300 questionnaires were sent out GSA express mail to the six geographic commands on 5 September. These envelopes contained the surveys and an explanatory letter to the Director of Nursing Service (DNS) describing the study and directions concerning distribution of the questionnaires. We requested that the DNS distribute the questionnaires to the individuals occupying the positions listed or others as deemed appropriate and that she or he return the extra questionnaires to the researchers. The Director was also sent an authorization memo to indicate approval or disapproval of the survey and the number of questionnaires that were actually forwarded to Nurse Corps Officers.

We mailed 76 surveys directly to Nurse Corps Officers on independent duty or stationed at small duty stations such as recruiting districts or clinics. The mailing was completed

on 12 September 1986 after we had received verbal approval from the geographic commands.

Questionnaire returns began arriving within five days. 53% were received within 21 days. A total of 74% were received by 20 October 1986 when analysis began.

#### D. PREPARATION FOR ANALYSIS

Analysis of the survey was completed using a SAS statistical package. All responses were coded numerically. The initial preparation of the raw data is shown in Appendix H.

#### IV. SURVEY RESULTS

Responses of Navy Nurse Corps Officers provided great insight in determining the knowledge base needed for effective performance in management positions. The survey results confirm the extent to which Nurse managers need selected activities offered in either MPTA or civilian Nursing Administration programs.

A total of 263 respondents were in our entire sample. Of these, 27 are Nursing Administration graduates and six are MPTA graduates. For a complete breakdown of demographics and responses, see Appendix I.

##### A. ASSESSMENT METHODOLOGY

To assess the significance of these activities to Navy Nurse Corps Officers in management positions, we reviewed the importance category (question C of each of the activities queried). We summed the percentages of the responses on both the high and the low ends of the rating scale of this category. Comparisons were made to ensure consistency in determining which activities were of greatest and least importance. Both scales revealed identical findings regarding the rating of importance.

The review of our percentage scale revealed a range from 24% to 97%, with natural breaks occurring at 42% and 73%.

Accordingly, we decided to concentrate our review on the activities in the zero to 42% range and the 73-100% range. We also decided that, for assessment purposes, the range of answers within each of these two groups justified a further split. We also examined the middle response group (those of lesser significance), but in less detail than the other four groupings.

## B. THE EXTREMES

Ten of the thirty-two activities examined fell into the two extremes of our importance scale; that is, the activities in the 24-35% range and the activities in the 87-97% range (see Appendix J). These activities represent those of greatest and least importance. In sum, they tend to represent skills that are obtained primarily within the MPTA program with the exception of accounting and computer based statistical analysis which may be obtained in both programs.

The responses to each of these activities were analyzed to determine if there were differences in rank, length of service, education, position, time served in current position and duty station. Findings revealed no significant variances in any of the demographic data except for current position.

### 1. The Least Important

From 24% to 35% of our total sample rated the knowledge gained in five areas as least important for effective performance in their positions. Of the five, activity 15,



market analysis, received the lowest rating of 24, with the remaining four activities all scoring 30 or above. These four are computer based statistical analysis, statistical methods for analyzing manpower, accounting, and resource allocation. There is no discernible pattern in the positions of those so responding; in fact, the sample subset is comprised of Nurse Corps Officers holding a variety of management positions. The most favored responses came from nurses in Nurse Corps Detailing and 2XXX (Medical Department billets occupied by Nurse Corps Officers) positions. Although only about one-third of the respondents overall rated these activities as important, 100% of each of these two groups rated these activities as highly important. This was not so for Recruiters and Assistant Directors of Nursing Service, however, who generally rated market analysis and accounting only as necessary, as did Department Heads in their rankings of computer based statistical analysis and accounting.

Further, for each of these five activities, responses concerning capability and utilization were significantly lower. For example, accounting importance was rated 33, yet utilization was rated 6 and capability was rated 13 (see Appendix J).

There also were differences reported concerning the learning of these skills. For example, although up to one-third of the sample population reported that they gained

knowledge in these 5 activities through OJT, the vast majority of respondents said that they had not learned the skills whatsoever. An exception to this were the MPTA respondents who learned these skills at NPS, and some of the Nursing Administration graduates, who received education in these activities through their respective programs.

Activity 13c, Resource Allocation and activity 15, Market Analysis, are major components of several Economics courses taught in MPTA, however, less than one-third of our respondents stated they were necessary in their current positions. The Nurse Corps Officers holding detailing and recruiting positions rated both of these activities higher than respondents in the other positions.

The additional nurses that rated resource allocation important were 2XXX nurses and those in the positions listed as "other." As displayed in greater detail in Appendix K, only a small percentage of these groups said that they are utilizing or are capable of performing this activity.

All Nurse Corps detailers rated market analysis important, although only one-third said that they are actually utilizing this skill. There was more uniformity among recruiters' responses in that approximately one-half said that they are utilizing, capable and believe market analysis is important. Less than ten percent of the remaining respondents who rated market analysis important

for their jobs are utilizing the activity, but up to one-third said they are capable of performing it.

Concerning statistical methods for analyzing manpower, activity 10, a MPTA course, the widest gap between utilization and importance was reported by Department Heads, Hospital Staffing Detailers and Charge nurses. The Nurse Corps Detailers were unanimous in considering this activity essential for their jobs. Not only did they rate it as important, but they said that they are utilizing and are capable of performing statistics. Additionally, approximately one-third of our 2XXX sample rated this skill highly in all three categories. As seen in Appendix J, the percentage rating this activity as important is much higher than the percentage utilizing or capable.

Identified by our interviewees and required by MPTA and six Nursing Administration programs, Computer Based Statistical Analysis, activity 9, is another of the low-rated activities. Nonetheless, Nurse Corps Detailers rated this activity the highest in all three categories. However, only about one-third of all 2XXX, Department Heads, and Quality Assurance Coordinators rated this activity as important to their jobs, although, again, the rating of importance was significantly greater than the rating of capability and utilization.

Accounting, activity 12, was identified by Taylor and DeSimone [Ref. 10] and Price [Ref. 8] as essential to

the background for other managerial functions, yet only 33% of the sample population rated accounting as important. Within this response, however, all Nurse Corps Detailers rated accounting as a highly utilized and important activity. On the other hand, none of the 2XXX nurses or Assistant Directors of Nursing Service said that they are utilizing accounting; however approximately one-third rated it as important. Further, less than 20% of the Assistant Directors of Nursing Service and 2XXX nurses rated their capability level in this area as high.

Other interesting findings that are reflected in Appendix K are that few of the Department Heads, Clinic Nurses and "others" are utilizing this activity, with somewhat higher numbers rating it as an important skill.

## 2. The Most Important

As indicated in Appendix J, greater than 90% of our total sample population felt that five activities were most important. Two of the activities, basic management principles and organizational structure, are found in the MPTA and several Nursing Administration programs. Individual and group behavior, assignment, development, education and training, and performance appraisal are found only in the MPTA curriculum. These five courses or course components received the highest overall rating in utilization, capability and importance.



Most of the respondents acquired their ability in these 5 activities through OJT. Concerning the academic programs, a higher percentage of MPTA graduates received these courses in their program than did Nursing Administration graduates.

Taylor and DeSimone [Ref. 10] and Player [Ref. 7], as well as our interviewees, see a clear need for basic management principles, activity 5a, organizational structure, activity 5b, and individual and group behavior, activity 5c.

The respondents citing the need for these activities included Directors of Nursing Service, Assistant Directors of Nursing Service, Recruiters, Nurse Corps Detailers, 2XXX nurses, Educational Coordinators, Department Heads and "others." These respondents also rated their utilization and capability high across the board, except for Department Heads and Charge Nurses who rated utilization at approximately 50.

Assignment, Development, Education and Training, activity 6b, gained through several courses at MPTA, also scored high among our sample. Nearly all surveyed rated this activity as being an important function of their position. All of the Assistant Directors of Nursing Service, Educational Coordinators, Nurse Corps Detailers and Charge Nurses and nearly all Recruiters and Quality Assurance Coordinators rated this activity as important. Nonetheless,



utilization among 2XXX nurses, Recruiters, Quality Assurance Coordinators and Charge Nurses was somewhat lower, at approximately 50 (see Appendix K).

Nearly all of the respondents rated Performance Appraisal, activity 6D, as an important function. All Assistant Directors Nursing Service and Nurse Corps Detailers rated this activity high across the board in utilization, capability and importance. Quality Assurance Coordinators, 2XXX nurses, Recruiters, Educational Coordinators and "others" also rated performance appraisal high in importance, yet lower in utilization.

#### C. THE MODERATES

Ten of the 32 activities examined fell into a moderate range; that is, they received responses in the 37-42% and the 73-87% ranges. In sum, they represent skills that are found in both academic programs and rate moderately low and moderately high in importance. The percentage responses of our sample to these activities (5, 6 & 7) are reflected in Appendix J.

An analysis of the respondents to these activities revealed no significant findings with respect to rank, length of service, education, time in current position or duty station. However, our data analysis showed that nurses in different positions rated certain activities of greater importance than others. Additionally, there were significant gaps between our respondents' level of utilization,

capability and importance. These gaps are reflected by position in Appendix K.

1. The Moderately Low Activities

Four activities were rated by our respondents in the 37-42% range. These activities are found in either MPTA or in Nursing Administration curricula with health policy being common to both. The other three activities are nursing research, determining planning variables, and productivity enhancement. Over one-third of our respondents stated they need the knowledge and skill in these activities for effective performance in their management positions. Except for nursing research, a greater percentage of those educated in these 5 areas attended NPS. However, OJT again remains the major source by which our respondents gained these abilities.

Nurse Corps Detailers and 2XXX nurses rated all four activities high across the board; recruiters and clinic nurses stated that determining planning variables and productivity enhancement were important; Directors of Nursing Service, Assistant Directors of Nursing Service and Charge nurses identified nursing research as important.

Even though many of the nurses surveyed stated that this particular group of skills is important to their position, Appendix K reveals that many fewer are utilizing or are capable of performing them.

As asserted by Zaler, Welches and Walker [Ref. 11], Nursing Research, activity 8, is important for nurse managers. As shown in Appendix K, Nurse Corps Detailers generally agree with this judgment. However, other groups, such as Directors of Nursing Service, Department Heads, Charge Nurses and Educational Coordinators rate it at 50 or less. Significant gaps (50 or greater) occur between utilization and importance in the Director of Nursing Service and Nurse Corps Detailer positions.

Nursing research is the basis for most Nursing Administration curricula and one-half of the Nursing Administration graduates reported that they gained it there. Although Nursing Research is not a specific component of the MPTA curriculum, one-half of the MPTA respondents stated that they gained the ability at NPS.

Health Policy, activity 11, was judged by our respondents to be most important for nurses who hold detailing positions, both in the hospital and at Naval Military Personnel Command. Approximately one-third of all Directors of Nursing Service, Assistant Directors of Nursing Service and Department Heads surveyed stated that health policy knowledge is important, but fewer than one-third said that they are capable, and less than 10% of the nurses holding these positions are actually utilizing the information (see Appendix K).

Concerning Determining Planning Variables, activity 18, a component of the MPTA Manpower and Personnel Models course, investigation reveals that it is utilized most by recruiters and detailers, who also judge it to be highly important. 2XXX and Clinic nurses also rated this as a moderately important activity but utilization was rated lower.

Concerning activity 20, Productivity Enhancement, Recruiters and Nurse Corps Detailers rated their utilization, capability and importance the highest in all three categories. While one-third of our sample charge nurses said that productivity enhancement was important to their positions, none of this group rated themselves as either utilizing or capable of performing it.

## 2. The Moderately High Activities

There were six activities which fell into the 73-87% range of our importance scale (see Appendix J). Of these six activities, three are gained from MPTA, technical writing, job analysis, and job design; and three are gained from Nursing Administration, nursing theory, nursing organizational structure, effectiveness, evaluation, quality assurance, and staffing, staff development, and patient classification. Further, our survey data revealed that the majority of our respondents believe that knowledge in these areas is needed in order to perform effectively.



These activities were rated highly by an equal distribution of nurses in all positions although different response levels for utilization and importance were evident throughout the analysis. Nursing theory, job analysis, staffing, staff development, and patient classification, and nursing organizational structure, effectiveness, evaluation, quality assurance were rated crucial by at least 50% of the sample respondents in each position; job design and job analysis were rated highly by at least half of the nurses in all positions. Among the various respondent groups, recruiters, Nurse Corps detailers and 2XXX nurses rated these activities the highest.

Taylor and DeSimone [Ref. 10] and Player [Ref. 7] and most interviewees identified job design, activity 5e, as critical to nursing management. At least 82% of all Assistant Directors of Nursing Service, recruiters, educational coordinators and clinic nurses rated this activity as an important facet of their jobs. Of these four groups, educational coordinators said that they are utilizing job design more frequently. All other respondent groups, however, said that they rated job design higher in importance than utilization.

More respondents learned job design through OJT than the number gaining it through graduate education. 83% of the MPTA respondents gained the skill at NPS, while only 19%



of the Nursing Administration graduates received it in their programs.

Nursing Theory, activity 1, which is found in the majority of the Nursing Administration programs was cited by all of the Directors of Nursing Service and Nurse Corps Detailers and most all of the Assistant Directors of Nursing Service as important.

The largest gaps between utilization and importance, as reflected in Appendix K, were reported by recruiters, Quality Assurance Coordinators, and Educational Coordinators where 0-41% were utilizing but 69-76% felt that it is important.

Almost half of our respondents capable of nursing theory gained it through OJT, 19% gained it through undergraduate education and an additional 26% gained it through postgraduate education. Of these, 63% specifically cited a Nursing Administration program. Nursing theory is not taught at NPS, nor was it cited by MPTA respondents.

Echoing our literature review and interviews, our respondents rated job analysis, activity 5d, as a crucial component for nursing management. In all positions surveyed, importance of this activity was rated greater than its utilization. Additionally, in most cases, importance was also rated higher than capability. All Nurse Corps recruiters and detailers said they believe that job analysis is an important facet of their jobs.

The widest gap between utilization and importance was reflected in the responses of charge nurses--less than 10% are utilizing job analysis. However, nearly one-half believe it is important.

Job analysis is a course component required in MPTA, although over one-half of our respondents stated that they gained the ability through OJT. Of the other respondents, 19% said that they received it through graduate education and 13% through technical or short courses. 83% of the MPTA respondents gained the ability at NPS. While 19% of Nursing Administration graduates reported that they gained this ability through their programs, job analysis was not identified in our Nursing Administration curricula review.

Carpenter [Ref. 12] and our interviewees discussed the importance of staffing, staff development, patient classification, active 4a and Nursing Organizational Structure, activity 4b. Survey respondents also judged these two activities as necessary.

Both these activities were rated extremely high by Nurse Corps Officers in top management positions, such as Directors of Nursing Service, Assistant Directors of Nursing Service, Department Heads and Hospital Staff Detailers who also rated the activities highest in utilization and importance.

The widest gap between utilization and importance in nursing organizational structure, effectiveness, evaluation,

and quality assurance was reported by Recruiters, Quality Assurance Coordinators and Educational Coordinators. 44-83% of the nurses in these positions said that they believe the activity is important but only less than one-fourth said that they are utilizing it.

OJT was the method by which more than half of our respondents gained the capability of performing these two activities, with less than one-fourth gaining their skills through technical or short courses. Although these two activities are obtained through Nursing Administration programs, and not specifically in MPTA, one-half of both MPTA and Nursing Administration graduates stated that they received it in their respective programs.

Our respondents and an interviewee strongly emphasized the need for Technical Writing, activity 2, within the Nurse Corps. This activity is a component of the managerial communications course taught at NPS, but is not included in any of the Nursing Administration curricula reviewed.

The majority of the nurses in 2XXX, recruiting duty and detailing positions rated this activity high in all three categories. The largest gap between utilization and importance was reflected by Directors of Nursing Service (only a 67% utilization rating) but nearly all stated that technical writing is important.

Most respondents capable of technical writing gained it through OJT. One-third of the MPTA respondents gained

the ability at NPS, while only one Nursing Administration graduate said that she/he gained technical writing from her/his program.

#### D. RATINGS OF LESSER SIGNIFICANCE

Twelve activities, whose ratings were above the "least important" and below the "most important" were reviewed for any evidence of abnormal findings.

In almost all cases, and following the patterns of the other groups, importance was rated higher than capability and utilization. The percentage point difference from utilization to importance ranged from 14 to 39. In one activity, however, the percentage for capability was greater than that of both utilization and importance.

Of the twelve activities, our analysis highlighted two that merit further discussion. The first, activity 6a, Acquisition, Recruiting, Selection of military personnel, is a course component in the MPTA curriculum, and it was analyzed to assess if there existed significant demographic components which would explain why 60% of the respondents rated this activity so important compared to the low percentage actually utilizing and performing it. Analysis of the activity with respect to utilization, capability, and importance was conducted. Recruiters and Nurse Corps detailers were the groups rating this activity highest. Of interest is that there were respondents in six additional positions who rated the activity important but were not utilizing it



to any great extent. These responses are listed in Appendix K.

Less than 25% of Directors of Nursing Service, Assistant Directors of Nursing Service, Quality Assurance Coordinators, Educational Coordinators, Charge Nurses and Department Heads said that they are utilizing acquisition, recruiting, selection of military personnel. However, approximately 50% of the respondents in these positions rated it as important.

Of those who are capable of performing this activity--72% obtained the ability to do so by OJT. Of noteworthy interest is that 75% of the MPTA respondents gained the ability at NPS, while only one Nursing Administration graduate gained the ability through her/his program.

The second, activity 12a, Accounting concepts, Cost accounting, Budget development, also is a component of MPTA. Contrary to the responses received for activity 12, Accounting, this activity received a much higher response. The findings revealed that the Nurse Corps Detailers were the only group to rate utilization, capability, and importance consistently high across the board. Respondents in all the other positions listed, however, rated importance much higher than utilization or capability.

Concerning the source of skills, half of the respondents said that they gained the ability through OJT, all of the MPTA respondents said that they gained the ability at NPS, and 31% of the Nursing Administration graduates stated they



received the ability at graduate school, although these advanced concepts were not outlined in the Nursing curricula we reviewed.

#### E. SUMMARY

To identify the relationship between Navy Nurse Corps job component needs and the skills gained at the two programs under study, the thirty-two activities covered in the questionnaire were analyzed. Based on percentage of importance, these activities were divided into five groups. Those activities which fell into the extreme ends of the importance scale were scrutinized as being most critical for analysis. All activities were felt to be important by at least one-fourth of the population.

Five activities, four from the MPTA curriculum and one from the Nursing Administration programs, received the lowest scores. Within this group, market analysis and resource allocation rated lowest on the scale, at less than 30. However, Nurse Corps detailers, 2XXX nurses, Recruiters, Department Heads, and Assistant Directors of Nursing Service rated these activities at significantly higher than average levels. OJT is the primary method by which nurse managers said that they have gained these skills. As expected, most MPTA graduates reported that they received their abilities via NPS. A lower percentage of Nursing Administration graduates reported receiving education in these areas at Nursing Administration programs.

Greater than 90% of our total sample population felt that five activities were important. These activities are found primarily in the MPTA program, with two being found in several Nursing Administration curriculums reviewed. These five activities received the highest overall rating in all three categories. More of our respondents obtained these skills through OJT than through graduate education. Of the nurses who gained these skills in graduate programs, a greater percentage received them in the MPTA program.

Those activities which received importance ratings from 37-42% are offered in either MPTA or Nursing Administration programs. Among the respondent groups, Nurse Corps Detailers and 2XXX nurses rated these activities the highest. In addition, Directors Nursing Service, Assistant Directors Nursing Service, Charge Nurses and Clinic Nurses cited needs for these skills. Ability to perform activities in this group reportedly was obtained primarily by OJT and graduate education.

Those activities which received importance ratings of 73-87% also contain an equal number of MPTA and Nursing Administration activities. Although gaps between utilization and importance were evident in all the activities in this group, at least one-half of the respondents in each position rated them as essential.

Many of our respondents gained the ability to perform these activities through OJT while others gained the needed skills from either MPTA or Nursing Administration programs.

On average, 54% of our respondents rated the twelve activities in our middle and last assessed group as necessary educational components for their positions. As with all other groups, the ratings for utilization and capability are less than importance. These activities were reviewed for deviations from the norm, with two activities meriting further discussion.

In sum, concerning the relationship of MPTA and Nursing Administration programs to the knowledge base needed for effective performance in nursing management positions, the survey confirmed the importance of organizational and personnel management activities--basic management principles, organizational structure, individual and group behavior, assignment, development, education and training, and performance appraisal. Additionally, the survey questioned the importance of the high-level economics and advanced statistics activities--market analysis, resource allocation, computer based statistics and statistics for manpower; and failed to confirm or question the remaining activities.

## V. CONCLUSIONS AND RECOMMENDATIONS

Through our research we were able to define a relationship between the skills gained in the MPTA program at NPS and the civilian Nursing Administration programs, and Navy Nurse Corps job component needs. Our findings revealed that while all of the MPTA and Nursing Administration activities contained in our survey were judged as important, significant relative differences were identified. Yet, even the least important of all activities was endorsed by at least one-fourth of the nurse managers surveyed.

Courses in the MPTA curriculum were split in rating of importance. Many of these courses rated very highly while others rated much lower. The majority of the Nursing Administration components fell within the mid-range of importance.

Based on the research findings, we believe that six areas merit specific action. The first area concerns those five activities that were considered most important by our respondents. These activities are taught primarily in the MPTA program and include the organizational management and personnel functions that were identified in Chapter IV. While a large portion of the Nursing Administration graduates said that they gained these skills through their civilian programs, the questions in our survey specifically



addressed the military environment. Though relationships to the military environment are not taught in any Nursing Administration programs reviewed, we believe (and their judgments confirm) that these graduates have been able to successfully transfer their knowledge gained in civilian programs to the military environment. We believe that the survey results concerning these management functions clearly demonstrate the importance of providing education in these skills to nurse managers. Accordingly, we recommend that the Nurse Corps review all Nursing Administration curricula to determine which programs offer the most comprehensive personnel/management courses, and that subsequent assignments be concentrated on those institutions with the most comprehensive programs. In addition, we recommend that discussions be held between Navy Nurse Corps sponsors and graduate school administrators to see whether curriculum changes can be made so that the programs contain more of the management components identified by this survey. Finally, because of its overall better ratings in this area, we also recommend that the Nurse Corps assign more officers to the MPTA program at NPS.

The second area meriting discussion concerns those five activities of lesser importance which were identified as necessary by only one-fourth of our sample. Market analysis, resource allocation and statistical methods for analyzing manpower are found only in MPTA. However, accounting



and computer based statistical analysis are found in both academic programs. We believe the degree of low ratings justifies consideration for possible curriculum modifications in the MPTA program and that consideration needs to be given to decreased emphasis of these activities. In accordance with our conclusions regarding four (accounting excluded) MPTA activities, we recommend that the Navy Nurse Corps in conjunction with the Naval Postgraduate School determine the feasibility of tailoring specific curriculum changes for Nurse Corps students in order to better conform with our findings of relative importance.

With regards to computer based statistical analysis offered in Nursing Administration programs, we observed that a relatively low number of programs offer the activity at this sophisticated level, therefore we have no recommendations regarding Nursing Administration curricula.

The fifth activity in this group, accounting, revealed a discrepancy regarding importance. The general principles of accounting were rated very low, while finance and budgeting activities were rated much higher. Based on this finding, we believe that we do not have sufficient evidence to support deleting or de-emphasizing accounting. Accordingly, no recommendation is offered.

The third area worthy of attention is the view of our respondents that some MPTA courses are needed by most all Nurse Corps managers but others by only a select few.

Despite these findings, we believe that the Nurse Corps needs more Nurse Corps Officers with comprehensive knowledge in the manpower arena. Further, we would not expect that Nurse Corps managers believe that all MPTA courses, including economics or statistics, are essential to their jobs. Accordingly, we recommend that consideration be given to designating additional billets as 33P. If this recommendation is accepted, specific Nurse Corps management billets would need to be analyzed closely, after reorganization of the Navy Medical Department takes place, to determine which positions could be designated 33P.

If policy prevents additional 33P billets in the Nurse Corps, we recommend that Nurse Corps Officers sent to NPS undertake a more flexible curriculum than that currently offered. Management and personnel courses would need to be the primary focus with a de-emphasis on advanced manpower, computer-based statistics, and advanced labor and manpower economics courses.

The fourth area which merits discussion concerns the reported disparity between utilization, capability and importance. There are two facets of this gap. The first is when capability and importance are both rated much higher than utilization. This phenomenon demonstrates that the individual sees the value of the activity and has the educational tools to perform the skill, but is not utilizing them. We believe that these gaps may be related to

insufficient equipment or other resources, lack of support, or job constraints. However, our data do not support a more definitive judgment. Accordingly, further research is recommended in order to more clearly identify the specific problems between utilization and importance and highlight specific corrective action.

The second facet concerns a capability level that is significantly less than the level of importance. In these cases, we believe that the capability level of these individuals should be raised to the level of importance, and that graduate education is the best method by which this may be accomplished. We recommend that nurses who hold management positions and who are not able to use activities which would improve their performance be given the opportunity to attend an institution of higher learning. Alternatively, Nurse Corps detailers should place only those with the skills into these positions.

Our fifth major area concerns our findings that while many respondents gained knowledge through OJT, it is unclear as to whether OJT is the most appropriate way of obtaining these abilities. Because of this inconclusiveness, we believe that further research needs to be done to determine whether OJT is an adequate process for obtaining the needed skills. We also believe that a cost-benefit analysis comparing OJT and graduate education would be useful.

In conclusion, we believe that with the changes recommended herein, the educational needs of Nurse Corps Officers in management positions can be met at NPS or in the traditional Nursing Administration programs, and we strongly recommend that educational opportunities continue to be offered in both programs. If we are able to do this, we believe that Nurse Corps Officers will be able to manage Nursing Service activities (our people and our resources) in a most efficient way. In short, we believe the evidence clearly demonstrates that graduate education is needed to prevent stagnation and to gain and maintain expertise in the advanced technology and ever-changing environments.

We also have several specific comments concerning the relative value of assigning Nurse Corps officers to the Naval Postgraduate School. First, we have found through this research that Nurse Corps Officers have much to gain by attending NPS and that MPTA can be looked at as a very viable method for Nurse Corps Officers to gain management expertise. Second, we believe that there are educational opportunities available at NPS that could not be measured by our survey. These were addressed by most MPTA graduate interviewees and are strongly supported by the researchers. These opportunities include daily interaction with the line Navy community, other staff corps and other military services, both foreign and domestic; gaining a conceptual understanding of current Navy manpower issues; and gaining



conceptual understanding of the impact of military manpower rules and policies. The Navy and military aspects gained at NPS are vital to all facets of the Navy community which includes the Nurse Corps, and these aspects are not likely to be gained through education at civilian institutions. Finally, we believe that there may be additional items concerning NPS assignments that we did not measure, but that may be relevant--these items we leave to subsequent researchers.



## APPENDIX A

### MPTA CORE COURSE DESCRIPTIONS

Organizational Systems is a course that studies organizational behavior, effectiveness, structure and planned change. It is important in helping to solve leadership problems and in increasing productivity amongst workers.

Managerial Communications strives to increase the speaking and writing ability of students, so that their self-presentation and performance will be enhanced on the job at a later time. The course is designed to enable students to develop proficiency in those aspects of speaking, listening, writing and reading that are particularly relevant to management.

Personnel Management Processes covers the broad aspects of human behavior in the work situation with special emphasis on the problem of work in the Naval environment. Topics include selection, training, evaluation of personnel, motivation, morale, supervision, equipment design and the impact of technological programs.

Management Policy studies analyze complex managerial situations requiring comprehensive integrated decision-making. Topics include operational and strategic planning, policy formulation, environmental adaptation and management of change.

Microeconomic Theory focuses on the determination of the allocation of resources and the evaluation of the consumer's economic environment. The course analyzes the role of government in cases where markets cannot provide an optimal allocation of resources. Application is made to the study of various public policy issues, both military and non-military.

Statistics consist of statistical tools and techniques used in managerial analyses for problem solving and decision making. The computer is used as a tool to facilitate computations with emphasis on statistical packages for large data bases.

Financial and Managerial Accounting emphasizes accounting concepts and standards and applications of accounting data to planning, control and decision-making. Topics include financial statement analysis, budgeting, performance measures, cost analysis for decision making and capital budgeting.

Public Policy Processes includes presidential policy making and management along with Congressional budget actions. It provides a framework for a critical examination of the federal budget process as it impacts upon the Department of Defense. Participants in the authorization/appropriation process are examined, along with an evaluation of proposed revenue sources.

Operations Research addresses critical application competencies in manual and computer assisted operations research and statistical techniques. The focus of the course is quantitative decision-making; investigating problem formulation, and problem resolution.

Productivity Analysis emphasizes methods of applying microeconomic and organizational effectiveness principles and concepts to the critical analysis of proposed and existing productivity programs. Alternatives are developed which have a higher probability of affecting the desired increases in program effectiveness and efficiency.

#### A. MPTA COURSE DESCRIPTIONS

##### PERSONNEL MANAGEMENT PROCESSES

A broad coverage of human behavior in the work situation with special emphasis on the problem of work in the naval environment. Topical areas covered include selection, placement, training, and evaluation of personnel; motivation, remuneration, morale, supervision, and working conditions in organizations; equipment design and man-machine relationships; and consumer (use) behavior and the impact of technological programs.

##### MANPOWER ECONOMICS

An introduction to the theoretical aspects of labor economics. Concepts covered include the supply of labor, the demand for labor, market wage determination, internal labor markets, human capital formation, migration mobility, compensating wage differentials, earnings equations, pay and employment discrimination, and unemployment and inflation.

##### MANPOWER PERSONNEL POLICY ANALYSIS

Study and analysis of manpower/personnel policy alternatives with emphasis on identifying the trade-offs involved, the dynamic impact of major policy decisions, and the short-

term and long-term consequences of decisions. Review, use, and evaluation of tools to aid in selecting policy alternatives. Study of representative cases.

#### MULTIVARIATE MANPOWER DATA ANALYSIS

Study of multivariate statistical methods for analyzing manpower problems. Emphasis is on use and interpretation of multiple regression and related techniques as applied to large personnel data sets. Skills in the use of computer packages such as SPSS and SAS are developed.

#### PRODUCTIVITY ANALYSIS

This course focuses on the concepts, purpose, techniques, and procedures of productivity analysis and discusses potential difficulties one is likely to encounter. Emphasis on applied analysis and practical DOD manpower issues.

#### MANPOWER ECONOMICS

A continuation and application of the theoretical development in MANPOWER ECONOMICS I. Recent applications of economic analysis to manpower, personnel, and training problems are studied. Typical topics include accession supply models, turnover and retention models, alternative retirement

#### MANPOWER AND PERSONNEL MODELS

The objective of this course is to enable the student to make use of the major types of manpower and personnel models for estimating the effects of policy changes on the personnel system. Topics include longitudinal and cross-section models, optimization models data requirements and validation. Applications in the form of current military models are included.

#### SEMINAR IN MANPOWER, PERSONNEL, AND TRAINING ISSUES I

An introduction to the institutional and issue focus of the military MPT system. Required of MPTA students in their first quarter.



## SEMINAR IN MANPOWER, PERSONNEL, AND TRAINING ISSUES II

Exposure to elementary analysis of problems and issues in the contemporary military MPT system. Required of MPTA students in their second quarter.

## SEMINAR IN MANPOWER, PERSONNEL, AND TRAINING ISSUES III

Presentation and discussion of contemporary issues and problems associated with components of the MPT arena. Required of MPTA students in their third quarter.

## SEMINAR IN MANPOWER, PERSONNEL, AND TRAINING ISSUES IV

An in-depth series of analyses of MPT issues and problems selected to integrate the skills covered in courses in the fourth quarter of the MPT curriculum and to provide suggestions for thesis topics. Required of fourth quarter MPTA students.

## MPT COMPUTER SKILLS DEVELOPMENT

An introduction to the use and operation of both the NPS mainframe computer system and the IBM PC with emphasis on the relationship to the requirements of the MPTA curriculum. Exposure to pertinent software packages, data files.

## MPT COMPUTER SKILLS ENHANCEMENT

Extension and application of the basic skills covered in MPT COMPUTER SKILLS DEVELOPMENT with particular reference to applications in concurrent course work.  
Prerequisite: MPT COMPUTER SKILLS DEVELOPMENT.

## MPT COMPUTER APPLICATIONS

Empirical analysis of MPT issues and concepts covered in MANPOWER ECONOMICS I and SEMINAR IN MANPOWER, PERSONNEL, AND TRAINING ISSUES III (taken concurrently).  
Prerequisite: MPT COMPUTER SKILLS ENHANCEMENT.



## ADVANCED MPT COMPUTER APPLICATIONS

Applications of computer skills to problems and issues developed in MN 4760, MULTIVARIATE MANPOWER DATA ANALYSIS, and SEMINAR IN MANPOWER, PERSONNEL, AND TRAINING ISSUES IV (taken concurrently).

Prerequisites: MPT COMPUTER APPLICATIONS.

## MPTA COURSE MATRIX

## MANPOWER PERSONNEL TRAINING ANALYSIS (847)

MANAGEMENT FUNDAMENTALS	QTR 1	MN 2031 ECONOMIC DECISION MAKING	MN 3333 MANAGERIAL COMMUNICATIONS SKILLS	MN 2150 FINANCIAL ACCOUNTING	MN 2300 MATHEMATICS FOR MANAGEMENT	MN 2111 SEMINAR IN MPTA ISSUES I	MN 2901 MPT COMPUTER SKILLS DEVELOPMENT
		MN 3140 MICRO- ECONOMIC THEORY	MN 3105 ORGANIZATIONAL SYSTEMS	MN 3161 MANAGERIAL ACCOUNTING	OS 3105 PROBABILITY AND STATISTICS	MN 2112 SEMINAR IN MPTA ISSUES II	MN 3902 MPT COMPUTER SKILLS ENHANCEMENT
GRADUATE PROGRAMS	QTR 3	MN 3760 MANPOWER ECONOMICS	MN 3111 PERSONNEL PROCESSES	OS 3006 OPERATIONS RESEARCH FOR MGMT	OS 3106 PROBABILITY AND STATISTICS	MN 2113 SEMINAR IN MPTA ISSUES III	MN 3903 MPT COMPUTER APPLICATIONS
	QTR 4	MN 4761 MANPOWER ANALYSIS	MN 4500 PRODUCTIVITY ANALYSIS	OS 4701 MANPOWER AND PERSONNEL MODELS	MN 4110 MULTIVARIATE MANPOWER DATA ANALYSIS	MN 2114 SEMINAR IN MPTA ISSUES IV	MN 4904 ADVANCED MPT COMPUTER APPLICATIONS
	QTR 5	CURRICULUM OPTION	MN 4106 MANPOWER/ PERSONNEL POLICY ANALYSIS	MN 3172 PUBLIC POLICY PROCESSES	THE SIS		
	QTR 6	CURRICULUM OPTION	MN 4105 MANAGEMENT POLICY	THESIS	THESIS		

## APPENDIX C

### NURSING ADMINISTRATION SCHOOLS

1. University of Alabama
2. University of South Carolina
3. University of Maryland
4. Marymount College
5. University of California, San Francisco
6. Emory University
7. Medical College of Georgia
8. University of Pennsylvania
9. University of Texas
10. Marquette University
11. Medical College of Virginia
12. DePaul University
13. Indiana University
14. Boston University
15. University of Washington
16. University of San Diego

# APPENDIX D

## NURSING SCHOOLS THAT CONTAINED THESE ACTIVITIES IN THEIR CURRICULUM

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nursing Theory	x	x	x		x	x	x		x		x	x	x	x		x
Research	x	x	x	x	x	x	x			x	x	x	x	x	x	x
Statistics	x	x	x													
Organizational Behavior	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x
Issues	x	x		x												
Role Development	x	x														
MIS/Computers	x	x	*		x						x					
Labor					x				*							
Quality Assurance	*	x							*						x	
General Management	x		x		x	*		x	*	x				x	x	x
Accounting/Fiscal		x	x	x	x	x	x	x		x	x	x	x	x	x	x
Economics				*							x	*				
Health Policy					x	x	x	x		x						x
Personnel/Resource																
Management						x		x	x							
Productivity				*												
Legal/Ethics/Law					x				*	x	x	x			x	
Managerial Operations/ Control																x
Nursing Management	x		x	x		x		x	x		x	x	x	x	x	x
Nursing Practicum			x	x			x	x	x	x	x	x	x	x		
Nursing Residency	x				x	x		x								

Numbers 1-16 indicate the number of the schools as identified in Appendix C.

X--indicates activity is a course offered

\*--indicates activity is a part of a course offered

## APPENDIX E

### THE SURVEY

#### SURVEY OF EDUCATIONAL COMPONENTS UTILIZED BY NURSE MANAGERS

As Navy Nurse Corps Officers we are currently conducting research for our thesis at the Naval Postgraduate School. The purpose of our study is to determine the relationship between the knowledge base gained in selected graduate programs and the knowledge base needed for effective performance within Nurse Corps management positions.

We are eliciting your assistance and expertise as a nurse manager to help us identify which skills and concepts you perceive are beneficial or required as job components within your current position. The questionnaire will take approximately 20-30 minutes to complete.

The intent of the survey is to determine which curriculum components are most advantageous to Nurse Corps management positions. The items included in the questionnaire are based on either the curricula content of various nursing administration graduate programs utilized by the Navy or that of the Naval Postgraduate School's Manpower, Personnel and Training Analysis program. In addition, a pilot study was conducted by Army Nurse Corps Officers at Silas B. Hays Army Community Hospital, Fort Ord, CA, to ensure the validity of the survey content.

Please begin your survey by completing the demographic data on the next page. The scales on the bottom of the next page are your key for completing this survey. To facilitate expeditious completion of this research, it will be greatly appreciated if you would complete and return this survey within 5 days of receipt. If you miss this deadline please return the survey anyway. All questionnaire answers will be treated as confidential, and will be used for thesis research only. Your participation in this survey is voluntary. If you elect not to participate, please return your blank survey in the envelope provided.

Your contribution to this project is greatly appreciated! If you have any questions you may contact us at (408) 384-2685 or through autovon 878-2536.

Jeannette Long  
LCDR NC USN

M. Ellen Quisenberry  
LCDR NC USN



DEMOGRAPHIC DATA--Please complete the following demographic data:

1. Rank: ENS \_\_\_\_\_ CDR \_\_\_\_\_  
LTJG \_\_\_\_\_ CAPT \_\_\_\_\_  
LT \_\_\_\_\_ RADM \_\_\_\_\_  
LCDR \_\_\_\_\_
2. Subspecialties (List by code if known)
3. Length of active commissioned service: \_\_\_\_\_
4. Highest degree completed:  
Diploma \_\_\_\_\_ BSN \_\_\_\_\_ Masters \_\_\_\_\_ Other \_\_\_\_\_  
what area \_\_\_\_\_ specify \_\_\_\_\_
5. Current position/title \_\_\_\_\_
6. Time served in current position:  
less than 6 months \_\_\_\_\_ 6-12 months \_\_\_\_\_ 12-24 months \_\_\_\_\_  
24-36 months \_\_\_\_\_ greater than 36 months \_\_\_\_\_
7. Current duty station and location \_\_\_\_\_

QUESTIONS/SCALES FOR SURVEY--KEY

These are the four questions and scales you will be using for each of the 21 activities in the survey. Please refer to these scales as you complete the survey.

For each item, please rate your current position on the following factors. Select the number between 1 and 7 which best describes your situation.

- A. Currently performing: To what extent are you current performing this type of activity?

1	2	3	4	5	6	7
not at	only	sometimes	moderately	quite	almost	con-
all	rarely		often	a bit	all	stant-
					the	ly
					time	

B. Capability: Whether or not you actually do them, how capable do you judge yourself of performing such activities?

1	2	3	4	5	6	7
not capable at all	extremely limited	not too good	fairly good	pretty good	very good	ex- pert

C. Importance: Whether or not you are now doing them or how well you can do them, how important do you feel such activities are for optimal performance on your job?

1	2	3	4	5	6	7
not need- ed	only of minor import- ance	somewhat impor- tant	fairly impor- tant	very impor- tant	extremely important	essen- tial or criti- cal

D. Obtained: How did you gain the majority of your ability to perform this activity?

1	2	3	4	5	6	7
Not applica- ble	OJT &/or experi- ence	under- gradu- ate edu- cation	NPGS edu- ca- tion	other gradu- ate educa- tion	Part-time or short technical course	Other

The following list of concepts and operational definitions describe those elements that form the basis of either a nursing administration program or the MPTA program at NPS. Please indicate to what extent you are currently utilizing each activity. Additionally, designate your current capability to perform each activity, how important that activity is for optimal performance in your current job and how you obtained the ability to perform this activity. Please refer to the key above.

1. Nursing Theory--applying theories of nursing, administration, and leadership to facilitate delivery of patient care.
2. Technical writing, Navy correspondence, official correspondence.
3. Computer programming techniques and software development principles. Use of microcomputers--word processing, data base management, spread sheets, and data display.

4. Nursing management strategies for effective nursing administration
  - a. staffing, staff development, patient classification
  - b. nursing organizational structure, effectiveness, evaluation, includes quality assurance
  - c. nursing service budget
  - d. labor relations and health law
5. Organizational management in the military environment
  - a. basic management principles, management decision making, planning and control
  - b. organizational structure, planned change, organizational effectiveness
  - c. individual and group behavior, motivation, communication, group dynamics, and leadership
  - d. job analysis--analysis of job requirements
  - e. job design--specifying individual work tasks, specifying the method of performing the work tasks, and combining work tasks into jobs for assignment to individuals.
6. Personnel management functions:
  - a. acquisition, recruiting, selection of military personnel
  - b. assignment, development, education, training
  - c. retention, compensation, pay level and structure, retirement
  - d. performance appraisal and evaluation.
7. Strategic planning--mission development, determining broad strategic objectives and general strategies for the organization and deciding what resources will be needed and how they will be allocated.

8. Nursing Research--identification of researchable nursing problems in providing health care delivery; includes elementary statistics, overview of research process, styles of researchers, logic, ethic, philosophy, and tools.
9. Computer based statistical analysis--fundamental statistical and probability theories and techniques.
10. Statistical methods for analyzing manpower problems--use and interpretation of methods such as forecasting, techniques applied to large data sets, use of sophisticated computed packages.
11. Health Policy--impact of legislative system and process on health care systems. Analysis of health care delivery systems in the U.S. and their effects on health care delivery.
12. Accounting--general principles of accounting applied to health care institutions.
13. Finance and budgeting
  - a. accounting concepts, cost accounting, budget development
  - b. cost-benefit analysis, cost analysis for decision making, capital budgeting
  - c. resource allocation in the Defense sector, Defense budget preparation
14. Economic decision making--basic economic concepts involved in the decision processes of individuals and groups faced with scarcity of resources.
15. Market analysis--supply and demand, wage determination, unemployment, inflation, economic analysis of manpower.
16. Problem-solving and decision-making models--decision theory, quantitative techniques appropriate for management analysis, project scheduling, inventory, and simulation.

17. Manpower and personnel models--to estimate effects of policy change on a personnel system, qualitative and quantitative methodology used to respond to changing requirements in size, composition, use, movement, and training of Navy personnel.
18. Determining planning variables such as end strengths, accession demands, force levels, and training pipeline management.
19. Determining the short and long term effects of manpower personnel or training management policies.
20. Analysis and development of effective productivity enhancement programs.



## APPENDIX F

### RATIONALE FOR USING SURVEY QUESTIONNAIRE

The mail questionnaire was chosen as our method of data collection because the population under study is widely spread geographically amongst medical facilities and billets in the continental United States. Since personal interviews would involve expensive travel cost and time we decided that the mailed survey would be the best method to survey a large sample. The second major advantage of this method is that it reduces biasing errors that may arise because of the nature of the personal interaction between the interviewer and the respondent. The third advantage of the mail questionnaire is greater anonymity which may elicit a higher response rate than a personal interview. If a questionnaire is presented without any apparent identifying information, the respondents may feel greater confidence that their replies cannot be identified as coming from them. [Ref. 24]

Another advantage of the questionnaire is that it may place less pressure on the subjects for an immediate response. When respondents are given ample time for filling out the questionnaire, they can consider each point carefully rather than reply with the first thought that comes to mind, as often happens under the social pressure of long silences in an interview.

The major disadvantage of the mail questionnaire is that it might fail to obtain an adequate response rate. However, certain characteristics of our respondents are associated with a high response rate in general and helped us to determine that a mail questionnaire would be an adequate strategy. The sample to be surveyed is a homogeneous group of Nurse Corps Officers who are individuals with similar background characteristics. The response rate for most select groups is basically higher than it is for the general population because members of these groups are more likely to identify with the goal of the study and thus will be more motivated to respond. Respondents who are more educated or who are more familiar with the topic under investigation are other important factors that help determine the rate of return. Finally, professionals tend to have the highest response rate among all other occupations. [Ref. 25]

Since the response rate can be affected by the manner in which the questionnaire is designed and mailed, much thought was given to the physical layout including the questionnaire length and the color of the paper used. [Ref. 26] Therefore, the questionnaire was condensed to two pages in length with the cover letter on yellow paper to get the respondent's attention in order to elicit more returns.

The cover letter was designed to succeed in convincing the respondent to fill out the questionnaire and mail it back as well. It identified the persons conducting the

survey, the sponsor of the study, the purpose of the research, told the respondents why it is important that they fill out the questionnaire, why the person had been selected as a participant and assured them that their answers would be held in strict confidence. In addition to an explanation of the mechanics of returning the questionnaire, a stamped, self-addressed envelope was enclosed to increase the response rate and to make it easier for our subjects to comply.

To encourage a higher response rate we asked the respondents to return the surveys even if they missed the five day deadline we had given. We also directed that if they elected not to participate in the study to return the blank survey anyway in the envelope provided.

It was essential to incorporate clear instructions on the survey itself, indicating how the respondent was to answer the questions. Since all of our questions have the same format, general instructions were included only at the beginning of the instrument.

Each potential subject was to receive a cover letter, the questionnaire, and a pre-addressed envelope. The researcher's contact autovon and commercial phone number were provided in the cover letter for respondents who wished to clarify any aspect of the survey.

## APPENDIX G

### SUGGESTIONS MADE BY PILOT RESPONDENTS

The suggestions made by our pilot respondents centered on the survey cover letter. Two nurses surveyed stated that the purpose of the instrument was not clear to them. To clarify the purpose, we added a sentence stating "The intent of the survey is to determine which curriculum components are most advantageous to Nurse Corps management positions."

One respondent questioned whether or not the "knowledge base" described was gained in all graduate programs or at the Naval Postgraduate School specifically. To eliminate this shortcoming we added an explanatory sentence which stated that "The items included in the questionnaire are based on either the curricular content of various nursing administration programs or that of the MPTA program."

When asked if the instructions were clear and concise, three respondents stated that they were unsure at first where the answer scales were located. To rectify this problem we repeated on page three to refer to the answer key on the bottom of page two.

There were several problems relating to our last survey question concerning how one obtained the ability to perform a particular activity. On the pilot the respondents were to



leave the line blank if they could not perform the activity. Several answered the question when they had indicated earlier that they could not perform the activity. To remedy this problem we eliminated the contingency in the question by offering "not applicable" as a choice so that all surveyed would answer the question.

Regarding the same question, several thought that the respondents surveyed should be able to select more than one answer for this scale because most people learn an activity in more than one place. To refine the question we asked, "How did you gain the majority of your ability to perform this activity?" There was also confusion concerning the definitions of OJT, experience and postgraduate education. We decided to combine OJT and experience into one category rather than separate them. We also added NPS, other graduate education and part-time or short technical course as possible choices. We also substituted the choice undergraduate education for primary education for greater clarity.

All nurses surveyed felt that the survey questions were grouped appropriately but several were not sure what aspects of "acquisition, recruiting and selection" they were to address. We added "of military personnel" to that activity based on the pilot suggestions.

On the average, it took our piloted subjects 27 minutes to complete the survey. We then added a sentence to our



cover letter explaining that the survey would take 20-30 minutes to complete.

# APPENDIX H

## RAW SURVEY DATA

SURVEY #001	5 02P 00E	1 16 6 51	1 11 13 54	3 2 2 5	7 6 7 2
7 7 7 0	1 7 2 5	1 6 2 5	1 6 2 5	3 3 3 3	7 7 7 6
3 5 4 2	4 5 5 6	4 6 7 2	4 6 7 2	3 3 3 3	3 5 3 3
4 6 6 5	3 6 6 5	3 6 6 5	3 6 6 5	3 3 3 3	3 6 6 5
3 6 6 5	3 6 6 5	3 6 6 5	3 6 6 5	3 3 3 3	3 6 6 5
SURVEY #002	5 01E	3 19 5 11	1 25 15 53	5 6 5 2 3	4 4 4 2
6 7 6 2	3 6 5 5	3 6 4 3 5	1 4 3 5 5	1 1 2 2 7	4 4 4 3
4 5 4 5	6 6 6 5	4 4 5 5 5	4 4 5 5 5	1 1 2 2 5	4 6 6 5
1 3 1 7	3 4 5 5	5 5 5 5 2	5 5 5 5 2	1 1 2 2 5	5 6 6 5
4 5 5 5	2 5 5 5	5 5 5 5 2	5 5 5 5 2	1 1 2 2 5	5 6 6 5
1 4 1 5	4 5 6 5	5 7 7 5 2	1 3 3 1	1 4 2 4	5 5 5 2
SURVEY #003	5 40S	1 17 6 52	1 19 12 32	5 6 6 2 5 6	7 6 7 2
1 2 4 1	3 5 1 1	1 5 1 1	1 2 1 1	1 1 2 2 1	4 6 6 5
5 5 6 2	6 6 6 2	4 4 6 2	5 6 6 2	1 1 2 2 2	5 5 5 1
1 4 1 1	2 5 2 2	4 5 2 2	1 2 1 1	1 1 2 2 1	5 5 5 1
1 2 1 5	1 2 1 5	1 2 1 5	1 4 1 1	1 1 1 1	3 2 2 5
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	2 3 5 2	1 1 1 1
SURVEY #004	4 45S 07S 10S	1 16 6 53	1 23 11 57	2 6 5 2	7 5 7 2
5 3 5 2	1 6 7 2	3 6 7 2	1 5 6 2	3 6 6 5	7 6 7 2
6 6 7 3	7 6 6 3	7 6 6 3	6 6 6 3	3 6 6 3	1 6 6 2
1 6 1 5	4 6 6 1	4 6 6 1	1 3 3 1	1 3 3 1	1 4 2 1
4 5 5 5	1 3 1 1	1 3 1 1	1 3 1 1	1 3 1 1	1 2 2 5
1 2 1 1	6 4 2 2	6 5 2 2	6 6 1 2	6 6 1 2	4 6 6 5
SURVEY #005	4 45S 60S	1 13 4	1 21 15 59	1 7 1 2	6 3 6 2
7 1 6 2	1 3 1 1	1 2 1 1	1 4 1 1	1 1 2 2	7 7 7 2
7 7 7 2	7 7 7 2	7 7 7 2	7 7 7 2	7 7 7 2	7 7 7 2
1 2 4 1	7 2 2 1	7 2 2 1	1 4 4 1	1 1 4 1	1 1 4 1
1 2 2 1	6 5 5 2	6 5 5 2	6 5 5 2	6 5 5 2	6 5 5 2
SURVEY #006	4 40S 01S 02E	1 11 3 51	1 23 12 53	3 6 6 2	6 4 6 2
1 1 3 1	1 6 2 2	7 5 7 2	1 1 2 2	1 4 5 2	3 4 5 2
7 5 6 3	5 5 5 3	3 4 5 3	1 2 2 4	1 1 1 1	1 1 1 1
1 2 2 2	1 4 2 2	1 2 2 2	1 1 1 1	1 1 1 1	1 1 1 1
1 1 1 1	2 2 2 3	4 3 3 2	1 1 1 1	2 2 3 2	1 1 1 1
SURVEY #007	5 01P 07S	7 17 6 24 5	1 11 23 14 53	2 4 2 5	7 6 6 2
1 1 4 1	2 5 5 2	7 7 5 2	1 5 6 4	2 5 5 5	6 6 6 5
6 5 5 5	6 6 5 5	4 5 5 5	3 5 5 5	2 5 5 5	2 4 4 2
1 4 5 5	5 6 7 5	1 2 5 5	1 2 5 5	1 2 5 5	1 2 5 5
2 4 6 5	7 7 7 5	1 2 6 5	1 2 6 5	1 2 6 5	2 2 4 2
SURVEY #008	5 03P 35P	1 19 6 24 6	4 5 25 15 58	1 7 7 2	7 7 7 2
1 1 2 0	1 5 7 5	7 7 7 5	1 6 7 7	1 4 6 6	7 7 7 5
7 7 7 2	7 7 7 5	7 7 7 5	7 7 7 5	7 7 7 5	7 7 7 5
5 6 6 2	7 7 7 2	7 7 7 2	1 3 3 1	1 2 3 1	5 1 3 2
1 1 3 1	1 1 6 1	4 5 6 2	1 3 4 1	1 1 4 1	5 6 6 4
1 1 4 1	1 1 4 1	1 1 4 1	1 1 4 1	1 1 4 1	1 1 4 1
SURVEY #009	5 63P 03S 60S	1 16 5 35	1 11 11 60	2 5 1 5	7 6 7 2
1 2 2 2	1 6 1 2	1 5 1 2	1 1 1 2	1 1 1 2	5 5 5 2
5 5 5 5	5 5 5 5	5 5 5 5	1 1 1 1	1 1 1 1	1 1 1 1
1 1 1 1	3 6 5 2	1 1 1 1	2 3 3 1	1 1 1 1	3 3 3 1
1 1 1 1	1 1 1 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 1 1 1	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
SURVEY #010	5 01P	5 20 5 11	2 13 12 28	5 6 5 5	5 5 6 2
1 1 2 1	4 6 7 2	5 6 6 2	2 13 12	5 6 5 5	5 5 6 2
1 6 6 5	5 6 6 5	5 6 6 5	2 13 12	5 6 5 5	5 5 6 2
1 2 2 2	1 4 3 3	3 3 3 3	2 13 12	5 6 5 5	5 5 6 2
1 1 1 1	1 1 3 1	3 3 3 1	2 13 12	5 6 5 5	5 5 6 2



SURVEY #021	6 01S	7 26 4	3 12 14 30	7 7 7 2	6 6 6 2
1 1 1 1	7 7 7 2	7 7 6 2	7 5 5 2	7 5 5 2	6 6 6 2
7 7 6 3	7 7 7 2	7 6 6 2	7 5 6 2	7 5 6 2	6 6 6 2
4 6 6 2	7 7 7 2	6 6 6 2	7 5 6 2	7 5 6 2	6 6 6 2
2 2 3 2	1 1 1 1	1 1 1 1	7 5 6 2	7 5 6 2	6 6 6 2
1 1 1 1	1 1 1 1	1 1 1 1	7 5 6 2	7 5 6 2	6 6 6 2
SURVEY #022	4 0	5 12 5 59	3 14 13 30	5 6 5 5	7 6 7 2
4 4 4 2	6 6 6 2	5 6 6 2	7 5 5 2	5 6 5 5	7 6 7 2
4 5 6 2	6 6 6 2	5 6 6 2	7 5 5 2	5 6 5 5	7 6 7 2
7 5 6 2	6 6 6 2	5 6 6 2	7 5 5 2	5 6 5 5	7 6 7 2
5 3 5 6	6 6 6 2	5 6 6 2	7 5 5 2	5 6 5 5	7 6 7 2
SURVEY #023	4 37P	7 14 5 36	7 26 13 61	7 6 7 5	7 6 7 2
7 5 7 6	7 7 7 2	6 6 7 2	7 6 6 2	7 6 7 5	7 6 7 2
7 6 7 5	7 7 7 2	6 6 7 2	7 6 6 2	7 6 7 5	7 6 7 2
7 7 7 2	7 7 7 2	6 6 7 2	7 6 6 2	7 6 7 5	7 6 7 2
7 5 6 2	7 7 7 2	6 6 7 2	7 6 6 2	7 6 7 5	7 6 7 2
1 6 6 7	7 7 7 2	6 6 7 2	7 6 6 2	7 6 7 5	7 6 7 2
SURVEY #024	5 50S	7 22 2	7 22 15 0	7 7 7 2	3 4 2 2
7 4 6 2	7 6 7 2	7 5 2	7 7 7 2	7 6 7 2	3 4 2 2
7 7 7 2	7 6 7 2	7 5 2	7 7 7 2	7 6 7 2	3 4 2 2
6 6 5 2	7 6 7 2	7 5 2	7 7 7 2	7 6 7 2	3 4 2 2
5 6 6 2	7 6 7 2	7 5 2	7 7 7 2	7 6 7 2	3 4 2 2
3 4 3 1	7 6 7 2	7 5 2	7 7 7 2	7 6 7 2	3 4 2 2
SURVEY #025	5 04P	5 21 5 11 8	7 11 15 48	4 5 4 5	7 6 6 2
6 4 4 7	6 6 6 2	5 4 4 2	7 4 4 2	4 5 4 5	7 6 6 2
6 6 6 2	6 6 6 2	5 4 4 2	7 4 4 2	4 5 4 5	7 6 6 2
1 3 2 7	6 6 6 2	5 4 4 2	7 4 4 2	4 5 4 5	7 6 6 2
4 3 4 7	6 6 6 2	5 4 4 2	7 4 4 2	4 5 4 5	7 6 6 2
1 2 1 1	6 6 6 2	5 4 4 2	7 4 4 2	4 5 4 5	7 6 6 2
SURVEY #026	6 0	4 19 6 24	1 17 14 15	3 6 7 2	7 6 7 2
6 4 7 5	1 6 2 6	4 6 5 3	1 17 14 15	3 6 7 2	7 6 7 2
7 7 7 5	1 6 2 6	4 6 5 3	1 17 14 15	3 6 7 2	7 6 7 2
5 6 7 6	1 6 2 6	4 6 5 3	1 17 14 15	3 6 7 2	7 6 7 2
6 5 7 3	1 6 2 6	4 6 5 3	1 17 14 15	3 6 7 2	7 6 7 2
1 2 2 2	1 6 2 6	4 6 5 3	1 17 14 15	3 6 7 2	7 6 7 2
SURVEY #027	5 0	5 12 5 25	1 11 14 60	3 6 6 5	6 5 6 2
1 2 6 2	5 5 5 2	4 6 6 2	1 11 14 60	3 6 6 5	6 5 6 2
3 5 5 2	5 5 5 2	4 6 6 2	1 11 14 60	3 6 6 5	6 5 6 2
4 4 3 2	5 5 5 2	4 6 6 2	1 11 14 60	3 6 6 5	6 5 6 2
4 4 5 2	5 5 5 2	4 6 6 2	1 11 14 60	3 6 6 5	6 5 6 2
2 2 4 2	5 5 5 2	4 6 6 2	1 11 14 60	3 6 6 5	6 5 6 2
SURVEY #028	5 33P 45S	1 17 6 54	1 25 13 63	1 6 1 2 3	7 6 7 2 3 4
3 4 3 4	1 4 1 4	4 6 6 2	1 25 13 63	1 6 1 2 3	7 6 7 2 3 4
6 6 7 2	1 4 1 4	4 6 6 2	1 25 13 63	1 6 1 2 3	7 6 7 2 3 4
6 6 7 2	1 4 1 4	4 6 6 2	1 25 13 63	1 6 1 2 3	7 6 7 2 3 4
1 2 1 2	1 4 1 4	4 6 6 2	1 25 13 63	1 6 1 2 3	7 6 7 2 3 4
4 4 6 2	1 4 1 4	4 6 6 2	1 25 13 63	1 6 1 2 3	7 6 7 2 3 4
SURVEY #029	4 60S 61S	3 14 4	1 11 11 53	3 4 3 3	5 4 6 2
2 1 4 1	6 6 6 2	3 4 4 2	1 11 11 53	3 4 3 3	5 4 6 2
3 4 5 3	6 6 6 2	3 4 4 2	1 11 11 53	3 4 3 3	5 4 6 2
1 6 6 2	6 6 6 2	3 4 4 2	1 11 11 53	3 4 3 3	5 4 6 2
3 2 6 2	6 6 6 2	3 4 4 2	1 11 11 53	3 4 3 3	5 4 6 2
1 5 6 2	6 6 6 2	3 4 4 2	1 11 11 53	3 4 3 3	5 4 6 2
SURVEY #030	7 01P 10S	5 34 5 11	2 11 14 60	5 6 7 5 2	6 6 7 5 6
2 2 4 1	4 6 5 5	5 6 5 5	2 11 14 60	5 6 7 5 2	6 6 7 5 6
7 6 6 6	4 6 5 5	5 6 5 5	2 11 14 60	5 6 7 5 2	6 6 7 5 6
2 4 3 2	4 6 5 5	5 6 5 5	2 11 14 60	5 6 7 5 2	6 6 7 5 6
7 6 6 2	4 6 5 5	5 6 5 5	2 11 14 60	5 6 7 5 2	6 6 7 5 6
6 5 6 6	4 6 5 5	5 6 5 5	2 11 14 60	5 6 7 5 2	6 6 7 5 6



SURVEY #031	4 01P 03S 60K 10 5 11	22 11 60 5 6 7 5	7 6 7 2
3 3 5	3 5 4 5	5 5 5 5	5 6 7 5
5 6 7 5	5 6 7 5	5 5 5 5	5 6 7 5
5 4 6 5	5 4 6 5	5 5 5 5	5 6 7 5
5 4 6 5	5 4 6 5	5 5 5 5	5 6 7 5
1 3 2 1	1 3 3 1	1 3 3 1	1 3 3 1
SURVEY #032	4 0 10 6 51	11 11 56 1 6 4 2	7 4 7 2
1 2 3 2	5 6 6 2 4 5	4 4 3 2 5	7 4 7 2
7 6 6 5	5 6 6 2 4 5	4 4 3 2 5	7 4 7 2
1 2 1 1	5 6 6 2 4 5	4 4 3 2 5	7 4 7 2
5 4 4 5	5 6 6 2 4 5	4 4 3 2 5	7 4 7 2
1 2 1 1	5 6 6 2 4 5	4 4 3 2 5	7 4 7 2
SURVEY #033	6 61P 22 5 11	14 14 15 6 6 6 5	5 6 7 2
1 2 3 2	7 6 7 2	5 5 5 5	5 6 7 2
7 6 7 5	7 6 7 2	5 5 5 5	5 6 7 2
4 4 4 5	7 6 7 2	5 5 5 5	5 6 7 2
1 1 2 1	7 6 7 2	5 5 5 5	5 6 7 2
1 2 1 5	7 6 7 2	5 5 5 5	5 6 7 2
SURVEY #034	5 37P 17 6 52 6	5 1 11 12 56 7 6 7 3	7 6 7 2
6 6 7 5	3 5 5 2	5 2 5 5 5 5	7 6 7 2
7 6 7 5	3 5 5 2	5 2 5 5 5 5	7 6 7 2
6 6 7 5	3 5 5 2	5 2 5 5 5 5	7 6 7 2
5 5 6 5	3 5 5 2	5 2 5 5 5 5	7 6 7 2
4 5 6 5	3 5 5 2	5 2 5 5 5 5	7 6 7 2
SURVEY #035	6 01S 23 5 34	7 6 12 13 18 4 4 5 5	6 6 6 2
2 4 5 5	7 6 7 2	7 6 7 2	6 6 6 2
7 6 7 5	7 6 7 2	7 6 7 2	6 6 6 2
2 4 6 5	7 6 7 2	7 6 7 2	6 6 6 2
1 1 7 0	7 6 7 2	7 6 7 2	6 6 6 2
SURVEY #036	3 00E 8 4	1 3 21 12 59 1 7 1 3	7 5 7 2
6 4 5 2	1 5 1 6	1 3 21 12 59	7 5 7 2
7 3 7 7	1 5 1 6	1 3 21 12 59	7 5 7 2
4 3 7 7	1 5 1 6	1 3 21 12 59	7 5 7 2
1 4 2 6	1 5 1 6	1 3 21 12 59	7 5 7 2
7 6 7 6	1 5 1 6	1 3 21 12 59	7 5 7 2
SURVEY #037	4 50S 35S 10 1 6 6	5 6 14 15 18 5 6 7 2	4 6 5 3
1 0 0 0	7 6 7 6	5 6 14 15 18	4 6 5 3
7 6 7 6	7 6 7 6	5 6 14 15 18	4 6 5 3
1 0 0 0	7 6 7 6	5 6 14 15 18	4 6 5 3
1 0 0 0	7 6 7 6	5 6 14 15 18	4 6 5 3
1 0 0 0	7 6 7 6	5 6 14 15 18	4 6 5 3
SURVEY #038	4 0 10 6 55	23 11 56 6 5 6 2	5 2 7 2
1 2 3 1	5 6 6 2	23 11 56	5 2 7 2
5 5 5 5	5 6 6 2	23 11 56	5 2 7 2
1 4 1 1	5 6 6 2	23 11 56	5 2 7 2
1 2 2 5	5 6 6 2	23 11 56	5 2 7 2
1 2 2 5	5 6 6 2	23 11 56	5 2 7 2
SURVEY #039	4 20P 21S 03P 7 5 27	17 11 18 5 5 4 5	6 6 7 5
1 5 5 1	6 6 7 5	17 11 18	6 6 7 5
6 6 6 2	6 6 7 5	17 11 18	6 6 7 5
1 2 3 5	6 6 7 5	17 11 18	6 6 7 5
3 6 5 5	6 6 7 5	17 11 18	6 6 7 5
1 2 6 1	6 6 7 5	17 11 18	6 6 7 5
SURVEY #040	5 0 18 4	13 13 18 6 5 7 2	6 6 6 2
1 4 4 2	5 6 5 2	13 13 18	6 6 6 2
5 6 6 2	5 6 5 2	13 13 18	6 6 6 2
2 2 2 2	5 6 5 2	13 13 18	6 6 6 2
1 1 1 1	5 6 5 2	13 13 18	6 6 6 2
1 1 1 1	5 6 5 2	13 13 18	6 6 6 2



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SURVEY #051	5 0	1 7 5 11	1 25 13 48	1 7 1 2 3	5 5 5 2
1 1 3 1	1 7 7 2	1 7 7 5	1 5 7 1 1	1 4 1 4 2	5 5 5 2
1 1 1 1	4 7 7 2	1 1 1 1	1 5 3 5	1 1 1 1	5 5 5 2
4 3 4 7	1 1 1 1	1 1 1 1	1 5 5 2	1 1 1 1	5 5 5 2
1 1 1 1	7 6 6 2	1 1 1 1	1 1 1 1	1 1 1 1	5 5 5 2
SURVEY #052	4 0	1 10 4	5 2 21 13 59	1 6 5 7	7 6 7 2
4 5 4 7	1 5 6 2	1 5 6 2	1 6 5 2	1 6 5 2	7 6 7 2
1 1 1 1	3 6 7 2	3 6 7 2	3 6 7 2	3 6 7 2	7 6 7 2
4 4 1 2	7 6 7 2	7 6 7 2	7 6 7 2	7 6 7 2	7 6 7 2
4 4 4 7	1 3 1 1	1 3 1 1	1 3 1 1	1 3 1 1	7 6 7 2
1 2 1 1	1 2 1 1	1 2 1 1	1 2 1 1	1 2 1 1	7 6 7 2
SURVEY #053	4 40S	1 11 6 56	1 11 12 56	2 7 2 5	7 7 7 2
2 7 7 6	3 7 7 5	5 7 7 5	1 7 7 5	3 7 7 5	7 7 7 2
2 7 7 6	3 7 7 5	5 7 7 5	1 7 7 5	3 7 7 5	7 7 7 2
2 7 7 6	3 7 7 5	5 7 7 5	1 7 7 5	3 7 7 5	7 7 7 2
2 7 7 6	3 7 7 5	5 7 7 5	1 7 7 5	3 7 7 5	7 7 7 2
SURVEY #054	5 00E	3 20 4	1 17 12 27	3 6 5 5	5 5 6 2
6 5 6 2	7 6 6 7	3 7 7 2	1 5 5 3	3 6 5 5	5 5 6 2
5 5 6 2	6 6 7 7	5 5 6 2	1 5 5 3	3 6 5 5	5 5 6 2
1 4 5 3	2 3 6 4	3 4 6 2	1 4 5 3	3 6 5 5	5 5 6 2
2 3 4 3	2 4 4 2	2 5 4 2	1 4 5 3	3 6 5 5	5 5 6 2
SURVEY #055	5 03S	7 19 6 58	5 14 13 15	7 7 7 5	5 6 4 2
1 2 2 1	5 7 7 6	6 5 6 6	5 6 6 6	7 7 7 5	5 6 4 2
3 3 5 1	5 7 7 6	6 5 6 6	5 6 6 6	7 7 7 5	5 6 4 2
1 5 4 1	1 2 1 3	1 2 1 3	1 2 1 3	7 7 7 5	5 6 4 2
1 5 4 1	1 2 1 3	1 2 1 3	1 2 1 3	7 7 7 5	5 6 4 2
SURVEY #056	4 07S	7 12 4	1 17 12 23	7 7 7 3	6 5 7 2
5 4 5 3	7 6 5 5	2 7 2 6	1 5 5 1	7 7 7 3	6 5 7 2
1 1 1 1	4 5 7 6	1 1 1 1	1 4 1 1	7 7 7 3	6 5 7 2
1 1 1 1	7 1 1 7	1 1 1 7	1 1 1 1	7 7 7 3	6 5 7 2
1 1 1 1	7 6 3	7 6 3	1 1 1 1	7 7 7 3	6 5 7 2
SURVEY #057	5 50S	6 14 6 52	7 14 11 23	6 7 6 2	5 4 7 2
5 3 5 2	7 6 7 5	6 6 7 5	7 7 7 5	6 7 6 2	5 4 7 2
6 6 5 5	7 6 7 5	6 6 7 5	7 7 7 5	6 7 6 2	5 4 7 2
4 6 5 5	2 6 7 5	4 6 7 5	6 6 7 5	6 7 6 2	5 4 7 2
1 3 4 5	2 6 7 5	4 6 7 5	6 6 7 5	6 7 6 2	5 4 7 2
SURVEY #058	4 0	1 10 4	1 21 13 59	2 6 2 2	5 4 6 2
1 1 1 1	7 6 7 2	5 6 7 2	1 6 7 2	2 6 2 2	5 4 6 2
1 1 1 1	3 6 5 2	7 6 5 2	1 6 7 2	2 6 2 2	5 4 6 2
1 2 2 1	6 2 1 6	6 2 1 6	1 6 7 2	2 6 2 2	5 4 6 2
1 1 1 1	6 2 1 6	6 2 1 6	1 6 7 2	2 6 2 2	5 4 6 2
SURVEY #059	4 03S	6 13 4	1 28 12 42	5 6 7 2	6 6 6 2
2 2 4 2	2 6 6 2	6 6 6 2	1 3 4 2	5 6 7 2	6 6 6 2
2 6 6 2	6 6 6 2	6 6 6 2	1 3 4 2	5 6 7 2	6 6 6 2
1 1 1 1	2 6 6 2	6 6 6 2	1 3 4 2	5 6 7 2	6 6 6 2
1 1 1 1	2 6 6 2	6 6 6 2	1 3 4 2	5 6 7 2	6 6 6 2
SURVEY #060	6 01P	1 20 5 11	1 11 13 60	1 6 5 2	7 6 7 2
3 5 5 6	3 6 7 7	2 5 7 7	1 4 7 7	1 6 5 2	7 6 7 2
1 4 3 2	1 6 7 7	2 5 7 7	1 4 7 7	1 6 5 2	7 6 7 2
1 6 7 7	1 6 7 7	2 5 7 7	1 4 7 7	1 6 5 2	7 6 7 2
1 2 2 7	6 6 7 7	3 5 7 7	1 4 7 7	1 6 5 2	7 6 7 2

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SURVEY #071	5 05P 01P	7 18 5 11 6	5 8 12 14 42	6 6 7 5	4 5 6 2
1 3 3 2	7 6 7 2	3 6 7 5	2 2 2 2	2 3 3 3	4 5 6 2
6 6 6 5	7 6 7 2	3 6 7 5	2 2 2 2	2 3 3 3	4 5 6 2
1 3 3 1	7 6 7 2	3 6 7 5	2 2 2 2	2 3 3 3	4 5 6 2
1 1 1 1	7 6 7 2	3 6 7 5	2 2 2 2	2 3 3 3	4 5 6 2
1 1 1 1	7 6 7 2	3 6 7 5	2 2 2 2	2 3 3 3	4 5 6 2
SURVEY #072	5 07P 10P 03P	14 5 34	11 11 62	5 6 6 5	7 6 7 2
1 2 4 1	2 6 6 2	5 6 6 2	4 4 5 2	4 4 5 2	7 6 7 2
5 6 6 2	2 6 6 2	5 6 6 2	4 4 5 2	4 4 5 2	7 6 7 2
1 6 6 2	2 6 6 2	5 6 6 2	4 4 5 2	4 4 5 2	7 6 7 2
7 6 6 2	2 6 6 2	5 6 6 2	4 4 5 2	4 4 5 2	7 6 7 2
1 1 6 1	2 6 6 2	5 6 6 2	4 4 5 2	4 4 5 2	7 6 7 2
SURVEY #073	4 9 5 6	3 17 4 6	1 21 12 59	1 6 6 2	6 4 5 2
2 2 5 5	5 5 5 6	3 17 4 6	1 21 12 59	1 6 6 2	6 4 5 2
7 4 6 7	5 5 5 6	3 17 4 6	1 21 12 59	1 6 6 2	6 4 5 2
7 4 6 7	5 5 5 6	3 17 4 6	1 21 12 59	1 6 6 2	6 4 5 2
7 4 6 7	5 5 5 6	3 17 4 6	1 21 12 59	1 6 6 2	6 4 5 2
7 4 6 7	5 5 5 6	3 17 4 6	1 21 12 59	1 6 6 2	6 4 5 2
SURVEY #074	5 45K 6	4 18 3 2	3 25 12 32	5 6 6 2	5 5 7 2
2 2 2 2	6 6 6 6	4 18 3 2	3 25 12 32	5 6 6 2	5 5 7 2
5 6 6 6	6 6 6 6	4 18 3 2	3 25 12 32	5 6 6 2	5 5 7 2
1 2 2 1	6 6 6 6	4 18 3 2	3 25 12 32	5 6 6 2	5 5 7 2
1 2 2 1	6 6 6 6	4 18 3 2	3 25 12 32	5 6 6 2	5 5 7 2
SURVEY #075	5 22S 2 5	7 14 5 11	6 15 11 32	1 5 1 5	3 5 4 2
6 6 6 5	7 7 7 2	7 14 5 11	6 15 11 32	1 5 1 5	3 5 4 2
6 6 6 5	7 7 7 2	7 14 5 11	6 15 11 32	1 5 1 5	3 5 4 2
4 6 6 5	7 7 7 2	7 14 5 11	6 15 11 32	1 5 1 5	3 5 4 2
1 4 2 5	7 7 7 2	7 14 5 11	6 15 11 32	1 5 1 5	3 5 4 2
SURVEY #076	5 60K 63	6 15 5 5	5 12 11 42	7 6 7 5	5 6 5 2
2 2 2 5	6 6 6 6	6 15 5 5	5 12 11 42	7 6 7 5	5 6 5 2
7 6 6 6	6 6 6 6	6 15 5 5	5 12 11 42	7 6 7 5	5 6 5 2
2 2 2 5	6 6 6 6	6 15 5 5	5 12 11 42	7 6 7 5	5 6 5 2
2 2 2 5	6 6 6 6	6 15 5 5	5 12 11 42	7 6 7 5	5 6 5 2
SURVEY #077	4 61E 63E	5 14 4 2	1 17 14 42	2 6 5 2	6 6 6 2
1 2 6 2	6 6 6 6	5 14 4 2	1 17 14 42	2 6 5 2	6 6 6 2
6 2 6 2	6 6 6 6	5 14 4 2	1 17 14 42	2 6 5 2	6 6 6 2
1 2 6 2	6 6 6 6	5 14 4 2	1 17 14 42	2 6 5 2	6 6 6 2
1 2 6 2	6 6 6 6	5 14 4 2	1 17 14 42	2 6 5 2	6 6 6 2
SURVEY #078	4 00E 2 5	2 10 4 2	7 26 11 61	1 7 7 5	7 5 6 2
6 4 6 2	7 7 7 2	2 10 4 2	7 26 11 61	1 7 7 5	7 5 6 2
7 6 6 2	7 7 7 2	2 10 4 2	7 26 11 61	1 7 7 5	7 5 6 2
6 6 6 2	7 7 7 2	2 10 4 2	7 26 11 61	1 7 7 5	7 5 6 2
6 4 6 2	7 7 7 2	2 10 4 2	7 26 11 61	1 7 7 5	7 5 6 2
SURVEY #079	5 13E 2 5	7 16 5 35	5 16 13 15	7 7 7 5	5 6 6 2
1 2 3 6	7 7 7 2	7 16 5 35	5 16 13 15	7 7 7 5	5 6 6 2
6 6 6 2	7 7 7 2	7 16 5 35	5 16 13 15	7 7 7 5	5 6 6 2
1 3 3 1	7 7 7 2	7 16 5 35	5 16 13 15	7 7 7 5	5 6 6 2
1 1 1 1	7 7 7 2	7 16 5 35	5 16 13 15	7 7 7 5	5 6 6 2
SURVEY #080	5 01P 02P 35S	17 6 51	16 11 23	4 4 2 2	6 6 5 2
5 4 6 2	7 7 7 2	17 6 51	16 11 23	4 4 2 2	6 6 5 2
6 6 6 2	7 7 7 2	17 6 51	16 11 23	4 4 2 2	6 6 5 2
2 2 2 1	7 7 7 2	17 6 51	16 11 23	4 4 2 2	6 6 5 2
2 2 2 1	7 7 7 2	17 6 51	16 11 23	4 4 2 2	6 6 5 2

SURVEY #081	5 0	7 16 1	1 16 11 30	7 7 7 3	6 5 7 2
1 1 5 1	7 6 7	5 5 7 2	1 4 6 6	2 2 2 2	5 5 5 5
2 5 7 6	5 5 7 2	1 1 2 6	1 1 1 1	1 1 1 1	1 1 1 1
1 1 2 6	1 1 7 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 1 7 1	1 1 7 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
SURVEY #082	4 6 0 S	2 12 4	1 19 13 30	3 5 6 2	7 5 7 2
5 3 6 2	2 6 2 2	5 5 3 2	1 5 5 5	1 1 1 1	5 5 5 5
1 5 2 2	4 5 5 2	2 3 3 2	2 4 3 3	1 1 1 1	1 1 1 1
1 4 3 7	2 4 3 2	4 4 3 2	2 4 3 2	5 4 5 2	5 4 5 2
1 2 2 1	4 4 4 2	4 4 4 2	2 2 2 2	4 4 5 2	4 4 5 2
SURVEY #083	4 6 4 S 23 S	1 9 4	7 21 15 59	1 6 2 2	7 6 7 2
4 4 4 2	1 6 2 2	5 1 3	7 6 6 2	7 6 6 2	7 6 6 2
7 6 6 6	7 6 6 6	7 7 2 2	1 4 5 5	1 3 6 6	1 3 6 6
7 6 6 6	7 6 6 6	7 7 2 2	1 4 5 5	1 3 6 6	1 3 6 6
1 4 2 1	1 3 1 1	7 6 6 2	1 2 1 1	1 1 7 7	1 1 7 7
7 5 7 2	2 4 4 2	5 4 5 2	2 5 7 2	2 3 6 2	2 2 6 2
SURVEY #084	6 0 1 S 07 S	7 24 4	1 17 13 32	1 6 6 3	3 4 5 2
7 3 6 6	1 6 5 2	7 7 7 2	1 6 7 2	1 1 7 7	7 6 7 2
1 6 7 2	1 6 7 2	1 5 7 1	1 1 5 1	1 1 3 1	1 1 4 1
1 2 4 2	1 1 6 1	1 1 6 1	1 1 6 1	1 1 4 1	1 1 4 1
1 1 3 1	1 1 4 1	1 1 5 1	1 1 5 1	1 1 5 1	1 1 5 1
SURVEY #085	4 4 5 S	6 12 4	7 27 15 13	4 4 5 3	5 3 7 2
4 3 5 2	7 7 7 2	5 6 2 2	7 7 7 2	4 4 5 3	5 3 7 2
1 2 2 3	7 6 7 2	3 4 1 1	1 3 4 1	1 2 2 2	7 6 7 2
2 2 3 3	1 1 5 1	3 4 6 2	3 4 6 2	1 1 5 1	1 2 2 2
1 2 2 3	6 5 6 3	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
SURVEY #086	4 3 5 S	5 13 4	5 17 11 42	4 6 5 2	7 6 7 2
2 4 5 7	3 6 5 2	5 6 6 6	5 6 6 6	4 4 5 2	6 6 5 2
1 4 6 3	5 6 7 2	5 6 7 2	5 6 7 2	4 4 5 2	5 4 5 2
1 4 5 6	4 4 5 6	4 4 5 6	4 4 5 6	3 3 5 2	3 3 5 2
1 3 4 1	5 5 7 2	2 4 5 2	2 4 5 2	3 4 5 2	2 3 5 2
SURVEY #087	6 0 1 S 03 P	7 26 5 34	5 12 14 15	7 7 7 5	4 5 5 2
2 2 3 7	5 6 5 6	3 5 7 6	5 6 6 6	3 3 5 2	7 7 7 2
7 7 7 7	7 7 7 7	7 7 7 7	1 4 3 5	1 1 1 1	1 1 1 1
5 6 7 2	1 1 1 1	1 1 1 1	1 2 2 2	1 1 1 1	6 6 7 2
1 3 2 7	4 6 6 6	1 1 1 1	1 1 1 1	4 5 5 2	1 1 1 1
1 2 1 7					
SURVEY #088	4 0 0 P	5 14 5	1 15 12 42	5 5 7 5	2 4 3 2
1 1 4 1	5 5 6 2	4 4 5 2	1 4 5 2	1 4 5 2	5 5 6 2
2 4 4 2	5 4 5 2	1 1 3 7	2 2 2 5	1 1 1 1	3 2 2 2
1 1 2 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	2 2 2 2
1 1 1 5	1 1 1 5	1 1 1 5	1 1 1 5	1 1 1 5	1 1 1 5
SURVEY #089	4 0	7 12 6 51	7 27 13 16	6 6 7 5	5 5 6 2
2 2 4 2	7 6 6 2	4 5 5 5	7 6 6 6	4 4 5 2	6 6 7 2
2 5 6 5	7 5 6 5	5 5 7 2	4 5 5 5	2 2 4 2	2 4 5 5
2 4 4 5	6 5 6 5	5 6 5 5	6 5 6 5	1 2 6 6	6 5 6 5
1 2 6 1	5 5 6 5	5 6 5 5	1 2 6 6	5 5 6 5	6 5 6 5
SURVEY #090	6 0 1 S 03 P	7 23 5 57	6 12 11 16	7 6 5 6	7 6 5 2
3 2 3 7	7 7 7 2	5 6 7 2	6 5 7 2	3 3 4 4	7 6 7 2
1 5 5 5	3 3 3 2	4 4 3 2	2 2 3 3	2 2 3 3	1 1 1 1
1 1 1 1	3 4 3 2	4 5 3 2	2 2 3 3	2 2 3 3	1 1 1 1
1 1 1 1	3 4 3 2	4 5 3 2	2 2 3 3	2 2 3 3	1 1 1 1





SURVEY #101	5 30P		18 5		14 13 31	7 6 7 5	7 6 7 2
1 1 1 1 5	7 7 7 2 5	7 7 7 2 5	7 7 7 2 5	7 7 7 2 5	7 7 7 2 5	7 7 7 2 5	7 7 7 2 5
6 6 6 6 6	7 7 7 7 7	7 7 7 7 7	7 7 7 7 7	7 7 7 7 7	7 7 7 7 7	7 7 7 7 7	7 7 7 7 7
3 4 3 3 2	2 4 4 3 2	2 4 4 3 2	2 4 4 3 2	2 4 4 3 2	2 4 4 3 2	2 4 4 3 2	2 4 4 3 2
1 4 2 2	1 4 2 2	1 4 2 2	1 4 2 2	1 4 2 2	1 4 2 2	1 4 2 2	1 4 2 2
SURVEY #102	6 11S		22 4		13 13 25	7 7 7 2	6 6 6 2
1 2 7 6 6	4 7 6 2 6	4 7 6 2 6	4 7 6 2 6	4 7 6 2 6	4 7 6 2 6	4 7 6 2 6	4 7 6 2 6
2 2 2 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6
1 1 2 3 0	1 3 5 2 0	1 3 5 2 0	1 3 5 2 0	1 3 5 2 0	1 3 5 2 0	1 3 5 2 0	1 3 5 2 0
SURVEY #103	4 10E		12 4		15 14 42	7 6 7 2	5 5 7 2
1 1 5 1 1	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2
2 4 5 2 3	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2	5 6 7 2 2
1 1 6 1	3 4 5 2	3 4 5 2	3 4 5 2	3 4 5 2	3 4 5 2	3 4 5 2	3 4 5 2
SURVEY #104	6 01P		26 5 11		12 13 31	6 6 7 6	5 6 7 6
2 7 7 5 1	7 7 7 3 5	7 7 7 3 5	7 7 7 3 5	7 7 7 3 5	7 7 7 3 5	7 7 7 3 5	7 7 7 3 5
6 6 7 5 6	7 7 7 3 6	7 7 7 3 6	7 7 7 3 6	7 7 7 3 6	7 7 7 3 6	7 7 7 3 6	7 7 7 3 6
2 4 6 6 2	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6	5 6 6 2 6
SURVEY #105	4 0		9 4		19 11 21	7 5 7 2	7 4 6 2
1 1 2 1 1	7 5 6 6 2	7 5 6 6 2	7 5 6 6 2	7 5 6 6 2	7 5 6 6 2	7 5 6 6 2	7 5 6 6 2
4 4 6 2 2	4 5 6 6 2	4 5 6 6 2	4 5 6 6 2	4 5 6 6 2	4 5 6 6 2	4 5 6 6 2	4 5 6 6 2
1 1 1 1 1	1 1 5 1 1	1 1 5 1 1	1 1 5 1 1	1 1 5 1 1	1 1 5 1 1	1 1 5 1 1	1 1 5 1 1
SURVEY #106	6 01S		20 4		12 11 19	7 7 7 2	3 7 6 2
1 7 7 5 1	7 7 7 2 2	7 7 7 2 2	7 7 7 2 2	7 7 7 2 2	7 7 7 2 2	7 7 7 2 2	7 7 7 2 2
0 0 0 0 2	7 7 7 2 0	7 7 7 2 0	7 7 7 2 0	7 7 7 2 0	7 7 7 2 0	7 7 7 2 0	7 7 7 2 0
1 2 4 2	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
SURVEY #107	5 0		20 5 11		13 12 19	4 5 7 5	7 5 7 2
1 2 6 1 1	7 7 7 5 2	7 7 7 5 2	7 7 7 5 2	7 7 7 5 2	7 7 7 5 2	7 7 7 5 2	7 7 7 5 2
1 6 6 5 5	7 6 7 5 2	7 6 7 5 2	7 6 7 5 2	7 6 7 5 2	7 6 7 5 2	7 6 7 5 2	7 6 7 5 2
1 4 6 5 5	1 2 5 1 0	1 2 5 1 0	1 2 5 1 0	1 2 5 1 0	1 2 5 1 0	1 2 5 1 0	1 2 5 1 0
SURVEY #108	5 0		17 6 24		14 13 32	4 5 4 2	0 0 0 2
1 2 2 2 3	6 5 6 5 2	6 5 6 5 2	6 5 6 5 2	6 5 6 5 2	6 5 6 5 2	6 5 6 5 2	6 5 6 5 2
4 3 2 2 1	7 5 7 2 1	7 5 7 2 1	7 5 7 2 1	7 5 7 2 1	7 5 7 2 1	7 5 7 2 1	7 5 7 2 1
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
SURVEY #109	6 01S 50V		21 4		13 13 31	7 6 7 6	6 6 6 2
1 2 5 1 1	6 6 7 2 6	6 6 7 2 6	6 6 7 2 6	6 6 7 2 6	6 6 7 2 6	6 6 7 2 6	6 6 7 2 6
5 6 7 6 6	5 6 7 2 6	5 6 7 2 6	5 6 7 2 6	5 6 7 2 6	5 6 7 2 6	5 6 7 2 6	5 6 7 2 6
3 4 4 5 2	3 4 4 6	3 4 4 6	3 4 4 6	3 4 4 6	3 4 4 6	3 4 4 6	3 4 4 6
SURVEY #110	6 0		22 5 24		12 14 21	7 7 7 3	6 6 6 2
2 2 4 2 2	7 6 6 6 2	7 6 6 6 2	7 6 6 6 2	7 6 6 6 2	7 6 6 6 2	7 6 6 6 2	7 6 6 6 2
3 5 7 6 6	7 7 7 3 3	7 7 7 3 3	7 7 7 3 3	7 7 7 3 3	7 7 7 3 3	7 7 7 3 3	7 7 7 3 3
1 2 3 1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0

103

SURVEY #121	4 03P		11 4 24		1 19 13 15	4 6 3 3	7 6 6 7
5 6 5 6 6 7	3 3 3 3 3 3	7	4 5 5 5 5 5	5 4 3 2 2 2	1 6 6 6 6 6	3 3 3 3 3 3	6 6 6 6 6 6
2 4 4 4 4 6	1 2 3 3 3 2	5	5 6 6 6 6 6	5 3 3 3 3 3	1 4 4 4 4 4	2 2 2 2 2 2	1 1 1 1 1 1
1 2 2 2 2 1	3 3 3 3 3 3		5 6 6 6 6 6	5 3 3 3 3 3	1 4 4 4 4 4	2 2 2 2 2 2	1 1 1 1 1 1
SURVEY #122	5 0		16 5 34 6		8 12 14 29	7 6 7 5	7 4 6 2
3 2 5 5 5 5	7 7 7 7 7 7		7 5 5 5 5 5	7 5 5 5 5 5	5 4 4 4 4 4	5 4 4 4 4 4	5 5 5 5 5 5
6 6 6 6 6 6	7 7 7 7 7 7		4 4 4 4 4 4	4 4 4 4 4 4	5 5 5 5 5 5	6 6 6 6 6 6	6 6 6 6 6 6
4 3 3 4 5 5	3 2 2 4 7 5		7 5 5 5 5 5	7 5 5 5 5 5	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2
SURVEY #123	3 45K		8 4		27 14 34	4 6 4 3	6 6 5 2
2 2 4 3 2 2	5 5 5 5 5 5		4 4 4 4 4 4	4 4 4 4 4 4	4 4 4 4 4 4	2 2 2 2 2 2	2 2 2 2 2 2
2 2 2 3 3 2	4 4 4 4 4 4		4 4 4 4 4 4	4 4 4 4 4 4	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2
1 1 1 3 3 1	1 1 1 2 1 6		2 3 4 4 2 4	2 3 4 4 2 4	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
1 1 2 2 1 1	6 6 6 6 6 6		4 4 4 4 4 4	4 4 4 4 4 4	3 3 3 3 3 3	4 4 4 4 4 4	4 4 4 4 4 4
SURVEY #124	5 01S		21 6 24		12 13 34	7 6 7 2	4 6 5 5
1 2 5 5 5 5	7 6 6 6 6 6		6 6 6 6 6 6	6 6 6 6 6 6	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
5 5 6 6 6 6	5 5 5 5 5 5		5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
2 4 3 1 2 1	1 2 3 4 5 2		2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2
SURVEY #125	4 00P 40S	12S	17 5		28 13 42	7 7 7 2	3 3 5 5
1 1 1 1 1 1	4 4 4 4 4 4		6 6 6 6 6 6	6 6 6 6 6 6	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
4 4 4 4 4 4	7 7 7 7 7 7		2 2 2 2 2 2	2 2 2 2 2 2	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
1 1 1 1 1 1	5 5 5 5 5 5		3 3 3 3 3 3	3 3 3 3 3 3	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
1 1 1 1 1 1	1 1 1 1 1 1		1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
SURVEY #126	4 03S 02P	45S	10 6 51		19 12 24	3 5 3 2	7 5 6 2
4 3 4 4 2 2	5 6 6 6 6 6		4 4 4 4 4 4	4 4 4 4 4 4	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
7 6 6 6 6 6	6 6 6 6 6 6		5 5 5 5 5 5	5 5 5 5 5 5	4 4 4 4 4 4	4 4 4 4 4 4	4 4 4 4 4 4
2 2 2 2 2 2	4 4 4 4 4 4		5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
1 2 2 5 5 5	3 4 4 4 5 5		4 4 4 4 4 4	4 4 4 4 4 4	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2
SURVEY #127	5 10P		15 5 34		28 11 42	5 5 6 5	5 5 5 2
1 4 3 3 5 5	6 6 6 6 6 6		6 6 6 6 6 6	6 6 6 6 6 6	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
7 6 6 6 6 6	6 6 6 6 6 6		5 5 5 5 5 5	5 5 5 5 5 5	4 4 4 4 4 4	4 4 4 4 4 4	4 4 4 4 4 4
3 4 4 4 4 4	1 3 3 1 5 5		3 4 4 4 4 4	3 4 4 4 4 4	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2
2 3 3 5 5 5	5 5 5 5 5 5		5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
SURVEY #128	4 07S 03S	64S	11 5 11		19 11 18	6 5 6 2	7 4 7 2
2 4 5 5 5 5	6 6 6 6 6 6		6 6 6 6 6 6	6 6 6 6 6 6	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
2 2 3 3 3 3	6 6 6 6 6 6		5 5 5 5 5 5	5 5 5 5 5 5	4 4 4 4 4 4	4 4 4 4 4 4	4 4 4 4 4 4
1 2 2 3 3 2	3 4 4 4 5 5		4 4 4 4 4 4	4 4 4 4 4 4	7 7 7 7 7 7	7 7 7 7 7 7	7 7 7 7 7 7
2 3 3 2 2 2	6 5 5 5 2 2		4 4 4 4 4 4	4 4 4 4 4 4	5 5 5 5 5 5	5 5 5 5 5 5	5 5 5 5 5 5
SURVEY #129	4 0		14 1		12 12 42	3 7 7 2	3 4 4 2
1 1 2 2 2 2	2 7 4 4 2 2		4 5 4 4 6 6	4 5 4 4 6 6	3 3 3 3 3 3	3 3 3 3 3 3	3 3 3 3 3 3
4 4 3 3 3 3	3 3 3 3 3 3		2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2
2 2 2 4 2 2	1 1 1 2 2 2		1 2 2 2 2 2	1 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2	2 2 2 2 2 2
SURVEY #130	3 21S		9 4		11 59	1 6 7 2	7 5 7 2
7 2 3 3 2 2	1 7 5 4 2 2		7 7 5 3 2 2	7 7 5 3 2 2	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
1 1 1 1 1 1	4 6 6 6 6 6		2 2 2 2 2 2	2 2 2 2 2 2	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
1 1 1 1 1 1	1 1 1 1 1 1		2 2 2 2 2 2	2 2 2 2 2 2	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1





SURVEY #141	4 61 14 5 11	2 4 15 11 42	5 6 6 6 2	3 6 5 5 2
1 5 5 5 5	5 6 6 7 2	5 6 6 7 2	4 5 5 5 5	6 6 7 7 2
2 4 5 5 5	6 6 7 2 2	6 6 7 2 2	5 5 5 5 5	5 5 5 5 5
3 5 5 5 5	1 3 4 5 5	1 3 4 5 5	1 1 1 1 1	2 2 2 2 2
4 5 5 5 5	1 3 4 5 5	1 3 4 5 5	1 1 1 1 1	2 2 2 2 2
5 5 5 5 5	1 3 4 5 5	1 3 4 5 5	1 1 1 1 1	2 2 2 2 2
SURVEY #142	4 30S 14 4	28 13 42	6 6 4 2	6 5 5 2
3 3 5 2	2 5 3 2	1 1 1 1	4 6 6 2	6 6 6 2
5 4 6 3	7 6 6 3	5 6 6 2	5 5 4 1	4 1 6 1
1 1 1 1	6 5 6 1	1 1 1 1	1 1 1 1	5 5 6 1
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	5 5 6 1
1 1 1 1	2 4 2 2	1 4 3 2	1 1 1 1	5 5 6 1
SURVEY #143	4 01K 00E	13 5	6 6 7 5	7 5 7 2
3 7 5 2	7 7 5 2	7 7 5 2	5 5 5 5	5 7 7 2
7 6 7 5	7 6 7 5	7 6 7 5	3 3 3 3	7 6 7 2
3 6 7 5	3 6 7 5	3 6 7 5	5 5 5 5	4 6 7 5
3 6 7 5	3 6 7 5	3 6 7 5	5 5 5 5	3 5 5 5
SURVEY #144	5 03P	16 5 24	6 7 6 5	7 7 7 6
5 5 6 5	7 7 7 5	7 7 7 5	5 5 5 5	7 7 7 6
7 7 6 5	7 7 7 5	7 7 7 5	5 5 5 5	7 7 7 6
6 6 6 5	5 5 5 5	5 5 5 5	5 5 5 5	5 5 5 5
5 5 6 5	6 6 6 5	6 6 6 5	5 5 5 5	5 5 5 5
SURVEY #145	5 01S	20 4	7 6 7 2	4 6 5 2
1 4 5 2	6 6 7 2	6 6 7 2	5 5 5 5	5 5 5 5
5 6 6 5	7 6 7 2	7 6 7 2	5 5 5 5	5 5 5 5
1 2 2 1	1 2 2 1	1 2 2 1	5 5 5 5	5 5 5 5
1 2 1 5	2 3 3 5	2 3 3 5	5 5 5 5	5 5 5 5
SURVEY #146	5 02P	15 6 51	4 4 3 2	7 5 7 2
4 3 2 2	1 4 1 1	1 5 1 5	5 5 5 5	5 5 5 5
7 5 7 5	7 5 7 5	7 5 7 5	5 5 5 5	5 5 5 5
1 4 1 1	3 4 7 1	3 4 7 1	5 5 5 5	5 5 5 5
2 4 5 1	1 2 1 4	1 2 1 4	5 5 5 5	5 5 5 5
1 1 1 1	1 2 4 5	1 2 4 5	5 5 5 5	5 5 5 5
SURVEY #147	4 9	7 4	1 1 1 1	3 3 6 2
1 2 7 7	3 6 5 2	7 5 7 2	5 5 5 5	5 5 5 5
1 2 5 2	7 5 7 5	7 5 7 5	5 5 5 5	5 5 5 5
1 1 1 1	4 6 4 2	4 6 4 2	5 5 5 5	5 5 5 5
1 1 1 1	1 1 1 1	1 1 1 1	5 5 5 5	5 5 5 5
1 1 1 1	1 1 1 1	1 1 1 1	5 5 5 5	5 5 5 5
SURVEY #148	4 00E	10 4	1 2 1 1	6 5 6 2
4 2 3 2	2 4 4 2	5 6 6 2	5 5 5 5	5 5 5 5
6 6 7 2	7 6 7 2	7 6 7 2	5 5 5 5	5 5 5 5
1 2 4 1	4 6 7 5	4 6 7 5	5 5 5 5	5 5 5 5
3 3 6 2	5 5 5 3	5 5 5 3	5 5 5 5	5 5 5 5
SURVEY #149	4 63S	8 4	7 4 6 2	4 4 4 2
1 1 4 1	7 5 5 2	7 5 5 2	5 5 5 5	5 5 5 5
6 5 5 2	4 4 6 6	4 4 6 6	5 5 5 5	5 5 5 5
1 2 2 2	5 6 6 6	5 6 6 6	5 5 5 5	5 5 5 5
1 2 2 2	2 3 3 4	2 3 3 4	5 5 5 5	5 5 5 5
1 2 1 1	1 3 3 1	1 3 3 1	5 5 5 5	5 5 5 5
SURVEY #150	6 0	24 6 63	5 6 5 5	4 6 5 2
1 2 3 2	5 6 5 2	5 6 5 2	5 5 5 5	5 5 5 5
6 7 7 5	6 6 7 5	6 6 7 5	5 5 5 5	5 5 5 5
2 5 3 2	7 7 7 5	7 7 7 5	5 5 5 5	5 5 5 5
1 2 2 5	4 2 1 5	4 2 1 5	5 5 5 5	5 5 5 5
1 2 1 5	1 2 1 5	1 2 1 5	5 5 5 5	5 5 5 5

SURVEY #151	4 0	13 4	27 11	22 3	4 3	5 6	6 2
1 1 5 1	4 4 6 2	5 6 7 2	3 4 5 2	3 2 1 1	3 4 3 2	5 5 4 5	6 6 5 5
2 2 5 3	4 4 6 3	3 3 5 5	4 5 5 5	2 1 1 1	4 4 3 4	3 3 3 3	2 2 2 2
2 2 5 4	6 6 1 1	3 3 6 6	5 6 2 2	1 1 1 1	3 3 3 3	1 1 1 1	1 1 1 1
1 1 3 1	4 4 5 3	3 2 5 2	1 4 1 1	1 2 1 2	1 1 1 1	1 1 1 1	1 1 1 1
SURVEY #152	4 0	12 1	17 13	34 1	6 6	3 3	7 2
4 3 5 2	5 5 6 3	7 5 6 2	1 4 6 2	1 1 2 1	2 2 5 5	1 1 1 1	7 2 7 2
1 1 2 0	1 1 2 0	1 1 2 0	1 1 1 1	1 2 4 6	6 6 6 6	2 2 2 2	1 1 1 1
1 1 0 0	5 5 6 6	1 1 1 1	1 1 1 1	1 1 1 1	0 0 0 0	1 1 1 1	1 1 1 1
1 1 0 1	1 1 0 1	1 1 0 1	1 1 0 1	1 1 0 1	1 1 0 1	1 1 0 1	1 1 0 1
SURVEY #153	4 0 1 P	13 5 11	15 11	26 3	5 4	4 5	3 5
1 4 4 5	3 5 7 5	3 4 6 5	6 7 7 5	1 1 1 1	4 4 7 5	5 5 5 5	4 7 5 5
4 5 7 5	4 4 7 5	2 3 7 5	6 6 7 5	1 1 1 1	5 5 7 5	5 5 5 5	4 5 5 5
1 1 7 5	5 5 7 5	2 5 7 5	1 6 7 5	1 1 1 1	5 5 7 5	5 5 5 5	1 4 5 5
1 4 3 1	5 5 3 1	4 1 1 5	1 1 1 1	1 1 1 1	2 4 2 5	1 1 1 1	1 5 3 5
SURVEY #154	4 0	13 1	28 13	42 3	3 3	3 3	3 2
5 2 6 2	6 6 2 2	2 2 2 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	3 2 6 2
1 1 1 1	5 5 7 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
SURVEY #155	5 4 5 S	17 1	14 13	21 7	6 6	2 2	2 4
1 1 1 1	6 6 7 2	5 5 6 2	5 5 6 2	3 3 4 2	5 5 6 2	2 2 2 2	5 5 6 2
2 4 3 2	5 5 6 2	5 4 5 2	5 5 6 2	1 1 1 1	5 5 6 2	1 1 1 1	6 5 6 2
3 4 4 2	6 6 7 2	2 1 1 2	1 1 1 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 1 1 1	6 5 6 2	1 1 1 1	1 1 1 1	1 1 1 1	6 5 6 2	1 1 1 1	1 1 1 1
SURVEY #156	5 0 0 E 20 S	19 6 57	15 12	33 3	3 3	7 2	5 3
1 1 4 1	5 4 7 2	3 4 5 2	1 1 1 2	2 2 1 1	2 2 1 1	2 2 1 1	4 3 7 2
4 3 7 2	3 3 7 2	3 3 5 2	1 3 5 2	1 1 1 1	1 1 1 1	1 1 1 1	5 5 5 2
2 3 5 1	4 4 7 1	1 1 7 1	1 1 5 1	1 1 1 1	1 1 1 1	1 1 1 1	2 2 2 1
1 1 1 1	1 1 4 1	3 2 5 1	1 1 4 1	2 1 1 2	1 1 4 2	1 1 2 1	1 1 2 1
SURVEY #157	4 0 0 E	10 4	27 13	24 7	6 6	7 2	2 3
1 1 4 1	5 5 6 2	5 5 7 2	6 4 6 2	2 2 1 1	2 2 1 1	2 2 1 1	6 6 7 2
5 5 6 2	6 6 7 2	4 4 6 2	3 3 6 2	1 1 1 1	1 1 1 1	1 1 1 1	4 5 5 2
2 4 6 1	2 5 6 1	2 5 6 1	1 3 6 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
1 1 4 1	1 1 5 1	1 1 6 1	1 1 6 1	3 3 6 2	3 3 6 2	2 2 1 1	2 3 6 2
SURVEY #158	0 0	0 0	0 0	0 5	5 5	4 3	7 6
1 2 2 1	3 6 3 2	2 7 4 3	5 6 6 2	7 7 7 2	7 7 7 2	5 5 5 2	7 7 7 2
7 7 7 5	7 7 7 5	6 6 6 6	6 6 6 6	1 1 1 1	1 1 1 1	1 1 1 1	6 6 6 6
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1 1 1 1	7 6 6 6	2 2 3 2	1 1 2 1	4 4 4 5	4 4 4 5	4 4 4 5	1 1 4 2
SURVEY #159	6 0	21 6 51	17 15	19 6	6 6	5 5	3 4
2 2 2 2	6 2 1 3	6 6 6 6	1 1 1 1	3 3 4 4	1 1 1 1	1 1 1 1	5 6 6 6
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5 4 7 2	6 6 6 6	6 6 6 6	6 6 6 6	1 1 1 1	1 1 1 1	1 1 1 1	2 4 6 6
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SURVEY #160	5 7 6 V	20 4	28 13	42 5	4 7	2 2	3 3
2 2 2 2	5 4 5 2	6 5 6 2	3 3 4 2	2 2 2 2	2 2 2 2	2 2 2 2	3 3 4 2
3 4 6 2	6 5 7 2	3 4 6 2	3 3 4 2	2 2 2 2	2 2 2 2	2 2 2 2	3 3 4 2
4 4 4 2	2 2 2 2	3 3 3 2	2 2 2 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
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1 1 1 1	5 4 4 2	4 4 5 2	2 2 2 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1



SURVEY #161	4 0	15 1	28 11 42	7 6 6 2	5 5 6 2
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2 6 1 1 1	5 6 7 1 4	6 6 6 1 4	5 6 4 1 4	4 4 2 1 1	5 5 4 1 3
6 2 1 4 1	6 6 6 1 4	6 6 6 1 4	6 6 4 1 4	6 6 1 1 1	6 6 5 4 3
1 1 1 1 1	2 2 2 2 2	2 2 2 2 2	2 2 2 2 2	2 2 2 2 2	2 2 2 2 2
SURVEY #162	5 0	17 4	15 13 33	2 4 2 2	7 5 7 2
1 1 5 1	5 5 5 2	4 5 2	2 6 6 6	5 5 5 5	4 4 5 5
2 4 4 2	4 4 4 2	5 4 4 2	1 1 1 1	1 1 1 1	1 1 1 1
1 1 5 1	7 6 7 2	3 4 4 2	2 6 6 6	5 5 5 5	5 5 5 5
1 1 3 4	1 2 2 4	2 2 2 4	2 2 2 5	1 1 1 1	1 1 1 1
1 1 2 1	2 2 4 1	2 2 4 1	1 1 1 1	2 4 4 1	2 4 4 1
SURVEY #163	6 0	25 4	12 11 27	7 5 7 2	4 4 5 2
2 3 4 2	5 5 5 2	4 5 2	3 5 5 5	3 5 5 5	3 5 5 5
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2 2 3 2	5 4 6 2	5 4 6 2	2 2 2 2	2 2 2 2	2 2 2 2
SURVEY #164	4 0	13 5 33	5 2 11 11 60	1 6 5 2	7 4 7 2
6 5 6 6	2 6 6 5	4 4 4 5	5 5 5 5	2 3 2 2	5 5 5 5
7 5 7 2	5 6 6 5	5 6 6 5	5 6 6 5	4 4 4 4	6 6 6 6
2 4 4 2	5 6 6 5	5 6 6 5	5 6 6 5	5 5 5 5	5 5 5 5
2 3 3 1	2 4 4 5	2 4 4 5	2 4 4 5	2 2 2 2	2 2 2 2
SURVEY #165	5 50E	16 4	14 13 27	6 6 7 5	5 3 6 5
3 3 4 2	5 6 6 3	4 7 3	4 5 2 2	3 4 5 5	3 4 5 5
7 4 4 3	5 6 6 3	4 7 3	4 5 2 2	3 4 5 5	3 4 5 5
2 4 4 3	5 6 6 3	4 7 3	4 5 2 2	3 4 5 5	3 4 5 5
1 2 3 1	6 4 6 7	1 2 3 7	3 4 4 7	4 4 5 3	1 1 3 3
SURVEY #166	4 00E	12 4	15 12 14	7 6 7 6	5 5 6 2
1 1 1 1	7 6 7 2	5 5 2 2	4 6 5 2	4 5 6 2	5 5 6 2
3 4 4 2	6 5 7 2	3 1 2 2	1 3 3 3	1 1 1 1	1 1 1 1
1 1 4 2	1 1 4 1	1 1 4 1	1 1 4 1	1 1 4 1	1 1 4 1
1 1 4 1	4 4 6 6	3 4 5 2	3 4 5 2	3 4 6 2	1 2 5 1
SURVEY #167	6 01S 03P	24 6 24	12 14 25	6 7 7 2	5 6 7 2
1 2 6 1	7 7 7 2	7 7 7 2	6 7 7 2	7 7 7 2	7 7 7 2
7 7 7 6	7 7 7 6	7 7 7 6	7 7 7 6	7 7 7 6	7 7 7 6
2 6 6 6	2 4 4 1	2 4 4 1	2 4 4 1	2 4 4 1	2 4 4 1
5 4 3 2	2 5 5 6	2 5 5 6	2 5 5 6	2 5 5 6	2 5 5 6
1 3 4 2	2 5 5 6	2 5 5 6	2 5 5 6	2 5 5 6	2 5 5 6
SURVEY #168	5 63S 61S 45S	15 4	28 11 19	3 4 3 3	7 5 7 2
2 2 7 3	4 6 7 2	5 7 2	4 6 7 2	4 6 7 2	4 6 7 2
4 7 7 3	7 7 7 2	6 7 2	5 7 7 2	5 7 7 2	5 7 7 2
3 5 7 3	7 7 7 2	6 7 2	5 7 7 2	5 7 7 2	5 7 7 2
3 4 7 3	1 2 6 3	5 6 2	1 1 4 3	1 1 4 3	1 1 4 3
1 3 6 3	7 5 6 2	1 3 5 3	2 5 6 3	2 5 6 3	2 5 6 3
SURVEY #169	4 77	16 6 52	17 13 26	4 5 3 3	6 6 6 2
3 3 6 2	1 5 1 2	5 4 2	4 6 1 5	4 6 1 5	4 6 1 5
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5 5 5 6	4 5 5 6	4 5 5 6	4 5 5 6	4 5 5 6	4 5 5 6
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1 5 1 1	5 5 5 5	5 5 5 5	5 5 5 5	5 5 5 5	5 5 5 5
SURVEY #170	6 50S 03S 00E	26 4	14 15 33	7 6 7 2	5 5 5 2
3 3 4 7	7 7 7 2	7 7 2	7 7 7 2	7 7 7 2	7 7 7 2
7 7 7 2	7 7 7 2	7 7 2	7 7 7 2	7 7 7 2	7 7 7 2
1 3 2 1	1 1 3 0	1 1 3 0	1 1 3 0	1 1 3 0	1 1 3 0
1 1 2 1	1 2 2 0	1 2 2 0	1 1 2 1	1 1 2 1	1 1 2 1
1 1 2 1	1 2 2 0	1 2 2 0	1 1 2 1	1 1 2 1	1 1 2 1





SURVEY #181	5 00E	3 17 4	3 19 12 33	1 6 6 3	6 5 7 2
1 6 6 7 2 3	1 5 6 7 3 3	3 5 6 7 3 3	3 4 6 6 5 1	1 1 6 6 6 3	6 5 7 2
1 6 6 7 2 3	1 5 6 7 3 3	3 5 6 7 3 3	3 4 6 6 5 1	1 1 6 6 6 3	6 5 7 2
1 6 6 7 2 3	1 5 6 7 3 3	3 5 6 7 3 3	3 4 6 6 5 1	1 1 6 6 6 3	6 5 7 2
1 6 6 7 2 3	1 5 6 7 3 3	3 5 6 7 3 3	3 4 6 6 5 1	1 1 6 6 6 3	6 5 7 2
SURVEY #182	5 60S 07S	1 20 6 11	1 17 12 33	3 7 3 5	3 4 4 2
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1 4 2 1 1	5 6 6 6 5 5	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1	1 1 1 1 1 1
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1 5 2 5	1 5 2 5	1 5 2 5	1 5 2 5	1 5 2 5	1 5 2 5
SURVEY #183	4 00E	5 13 4	1 28 11 42	4 5 5 2	5 4 4 2
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3 4 6 2	5 5 6 2	5 3 6 2	1 3 4 2	4 5 5 2	5 4 4 2
2 2 5 1	1 1 4 1	1 2 3 1	2 2 4 1	1 1 1 1	1 1 1 1
1 2 3 1	1 2 4 1	1 2 4 1	2 2 4 1	1 2 4 1	1 2 4 1
SURVEY #184	4 07S 02S	45S 14 6 51	1 11 15 57	2 6 6 2	7 6 6 2
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6 6 6 2 5	5 6 6 2 2 5	5 6 6 2 2 5	1 3 6 2 2 5	2 6 6 2 2 5	7 6 6 2 2 5
SURVEY #185	6 0	1 20 6 24	1 19 11 14	2 6 2 2	5 4 7 2
2 4 5 2 2	1 6 6 7 5 2	1 6 6 7 5 2	1 5 7 2 2 2	2 6 2 2 2 2	5 4 7 2 2 2
2 6 7 2 2	5 6 6 6 5 2	5 6 6 6 5 2	1 5 7 2 2 2	2 6 2 2 2 2	5 4 7 2 2 2
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1 1 1 1	6 5 6 2	4 5 4 2	4 5 4 2	1 1 1 1 1 2	6 5 6 2 2 5
SURVEY #186	4 45S	5 12 4	4 28 14 42	3 5 5 2	3 4 6 2
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1 2 4 1	5 5 6 2	5 5 6 2	4 5 6 2 2 5	3 5 5 2 2 5	3 4 6 2 2 5
SURVEY #187	3 45S 00E	7 5 9 2 60	1 28 14 42	5 6 5 2	5 5 7 2
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SURVEY #188	5 0	7 16 4	5 13 13 24	7 7 7 3	5 6 6 2
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2 2 6 5	4 4 4 5 1	5 6 6 3 3	6 6 6 3 3	1 1 1 1 1 2	4 5 6 2 2 5
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SURVEY #189	5 0	4 15 4	1 14 13 26	3 5 4 3	3 5 4 2
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SURVEY #190	5 50S	5 19 6 55	1 31 12 13	6 6 6 7	2 2 2 1
5 6 5 7	2 4 6 2 2 5	5 5 6 2 2 5	1 6 3 2 2 13	6 6 6 7 1 1	2 2 2 1 1 1
1 6 6 5	1 5 6 2 2 5	5 5 6 2 2 5	1 6 3 2 2 13	6 6 6 7 1 1	2 2 2 1 1 1
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1 1 1 1	2 2 2 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1

SURVEY #191	5 10P	5 15 5 34	2 15 13 14	3 4 3 5	6 4 5 2
3 3 4 4 4 4 1 1 1	7 5 5 5 2 2 2 2 2	5 4 4 4 2 2 2 2 1	2 1 3 2 2 2 1 1 1	3 3 3 3 3 3 1 1 1	5 4 5 5 5 5 1 1 1
SURVEY #192	5 0	17 4	0 11 21	5 5 7 2	3 4 5 2
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SURVEY #193	4 61E	14 4	27 12 26	3 5 6 2	3 6 3 2
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SURVEY #194	5 00E 63E	19 5 11	13 12	6 5 5 5	7 6 6 3
7 5 5 5 5 5 1 1 1	6 6 6 6 6 6 2 2 1	6 1 1 1 1 1 1 1 1	1 5 1 1 1 1 1 1 1	1 4 1 1 1 1 1 1 1	7 6 6 3 2 2 1 1 1
SURVEY #195	5 0	16 3 51	18 13 32	4 6 5 2	2 4 3 2
3 6 5 5 5 5 1 1 1	7 2 6 6 6 6 3 3 3	7 1 1 1 1 1 1 1 1	1 2 1 1 1 1 1 1 1	1 4 1 1 1 1 1 1 1	2 4 3 2 2 2 1 1 1
SURVEY #196	5 00E	18 4	28 13 42	7 6 7 3	6 6 5 2
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SURVEY #197	5 0	16 4	16 13 33	7 6 6 2	2 5 3 2
6 6 5 6 6 6 2 2 2	7 4 5 5 5 5 2 2 2	5 4 4 4 4 4 2 2 2	1 5 5 5 5 5 2 2 2	1 4 1 1 1 1 1 1 1	2 5 3 2 2 2 1 1 1
SURVEY #198	6 0	24 4	25 13 33	7 7 7 7	7 7 7 7
7 1 6 6 6 6 1 1 1	7 6 6 6 6 6 1 1 1	4 6 6 6 6 6 1 1 1	1 6 6 6 6 6 1 1 1	1 6 6 6 6 6 1 1 1	7 7 7 7 7 7 1 1 1
SURVEY #199	4 23S 03S	11 6 62	28 14 17	4 6 4 5	7 7 7 2
2 3 5 7 7 7 7 7 5	2 5 7 7 7 7 7 7 5	2 6 3 7 7 7 7 7 5	2 6 3 7 7 7 7 7 5	2 6 3 7 7 7 7 7 5	7 7 7 2 2 2 1 1 1
SURVEY #200	4 07S 30S	11 4	17 14 17	6 6 7 3	7 6 6 2
5 7 4 5 6 2 2 2 2	1 3 7 7 7 7 2 2 2	7 7 7 7 7 7 2 2 2	1 5 7 7 7 7 2 2 2	1 4 5 5 5 5 2 2 2	7 6 6 2 2 2 1 1 1

SURVEY #201	6 0	1 1	1 1	1 1	21 6	24	1 1	11 15	60	2 7	2 1	1 1	7 6	7 2	2 2
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5 6 5	1 3 1	1 3 1	1 3 1	1 3 1	2 4 2	2 4 2	2 4 2	2 4 2	2 4 2	2 4 2	2 4 2	2 4 2	7 7 7	6 7 7	2 2 2
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SURVEY #202	4 9	5 5	5 5	5 5	14 4	4	1 1	28 13	42	5 6	5 5	5 5	3 3	5 5	5 5
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SURVEY #203	4 00E	2 2	2 2	2 2	15 4	4	2 2	17 12	14	2 5	2 2	2 2	7 6	6 6	7 2
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SURVEY #204	4 10P	1 1	1 1	1 1	14 5	5	1 1	25 11	62	3 7	2 2	2 2	6 7	6 6	2 2
3 2 7	1 1 1	1 1 1	1 1 1	1 1 1	5 5 5	5 5 5	1 1 1	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	6 7 7	6 6 6	2 2 2
6 4 4	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	1 1 1	5 5 5	5 5 5	5 5 5	5 5 5	5 5 5	6 7 7	6 6 6	2 2 2
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SURVEY #205	5 76	2 2	2 2	2 2	13 6	53	1 1	28 12	42	7 7	7 7	7 7	5 6	6 6	5 2
2 5 7	5 7 6	5 7 6	5 7 6	5 7 6	6 7 2	53	1 1	28 12	42	7 7	7 7	7 7	5 6	6 6	5 2
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1 1 1	5 7 6	5 7 6	5 7 6	5 7 6	6 7 2	53	1 1	28 12	42	7 7	7 7	7 7	5 6	6 6	5 2
SURVEY #206	3 61S	6 2S	6 2S	6 2S	8 4	6	1 1	27 13	17	7 6	6 6	6 6	3 5	4 4	2 2
1 3 1	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	1 1	27 13	17	7 6	6 6	6 6	3 5	4 4	2 2
6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	1 1	27 13	17	7 6	6 6	6 6	3 5	4 4	2 2
1 1 1	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	1 1	27 13	17	7 6	6 6	6 6	3 5	4 4	2 2
1 1 1	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	1 1	27 13	17	7 6	6 6	6 6	3 5	4 4	2 2
SURVEY #207	4 60S	6 3S	21S	10 4	4	6	4 4	27 12	29	6 5	6 6	6 6	2 3	3 3	2 2
1 1 1	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 4	27 12	29	6 5	6 6	6 6	2 3	3 3	2 2
4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 4	27 12	29	6 5	6 6	6 6	2 3	3 3	2 2
1 1 1	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 4	27 12	29	6 5	6 6	6 6	2 3	3 3	2 2
1 1 1	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 5 4	4 4	27 12	29	6 5	6 6	6 6	2 3	3 3	2 2
SURVEY #208	4 03P	2 2	2 2	2 2	18 6	11	8 8	11 11	42	6 6	7 7	3 3	5 6	6 6	2 2
4 4 2	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	8 8	11 11	42	6 6	7 7	3 3	5 6	6 6	2 2
7 3 5	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	8 8	11 11	42	6 6	7 7	3 3	5 6	6 6	2 2
4 5 5	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	8 8	11 11	42	6 6	7 7	3 3	5 6	6 6	2 2
3 4 3	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	6 6 6	8 8	11 11	42	6 6	7 7	3 3	5 6	6 6	2 2
SURVEY #209	5 30S	07S	19 6	58	6	58	1 4	17 13	33	7 7	6 6	2 2	5 6	5 5	2 2
1 2 6	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	1 4	17 13	33	7 7	6 6	2 2	5 6	5 5	2 2
2 2 6	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	1 4	17 13	33	7 7	6 6	2 2	5 6	5 5	2 2
6 1 1	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	3 3 3	1 4	17 13	33	7 7	6 6	2 2	5 6	5 5	2 2
SURVEY #210	5 0	2 2	6 7	4	17 4	2	3 7	14 14	12	6 6	2 2	2 2	5 6	5 5	6 6
5 7 7	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	3 7	14 14	12	6 6	2 2	2 2	5 6	5 5	6 6
6 5 5	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	3 7	14 14	12	6 6	2 2	2 2	5 6	5 5	6 6
1 1 1	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	3 7	14 14	12	6 6	2 2	2 2	5 6	5 5	6 6
2 2 1	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	7 7 7	3 7	14 14	12	6 6	2 2	2 2	5 6	5 5	6 6



SURVEY #211	6 01S 30P	7 27 5	2 5 12 15 12	7 7 7 7 2	4 6 5 2
4 2 4 6	7 7 7 2	7 7 7 2	2 5 12 15 12	7 7 7 7 2	4 6 5 2
7 7 5 2	7 7 7 2	7 7 7 2	2 5 12 15 12	7 7 7 7 2	4 6 5 2
1 1 1 1	1 1 1 1	1 1 1 1	2 5 12 15 12	7 7 7 7 2	4 6 5 2
1 1 1 1	1 1 1 1	1 1 1 1	2 5 12 15 12	7 7 7 7 2	4 6 5 2
SURVEY #212	4 9 1 2	5 12 4	1 2 17 14 42	3 6 5 5 6	5 5 5 2
5 2 1 1 2	2 2 2 2 6	2 2 2 2 6	1 2 17 14 42	3 6 5 5 6	5 5 5 2
1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 2 17 14 42	3 6 5 5 6	5 5 5 2
1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 2 17 14 42	3 6 5 5 6	5 5 5 2
1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 2 17 14 42	3 6 5 5 6	5 5 5 2
SURVEY #213	3 60S	1 3 7 4	1 2 21 13 42	1 3 6 5 2	6 4 5 2
1 1 3 1	1 4 6 2	3 4 6 1	1 2 21 13 42	1 3 6 5 2	6 4 5 2
7 5 7 2	7 5 7 2	7 5 7 2	1 2 21 13 42	1 3 6 5 2	6 4 5 2
3 3 4 2	5 5 5 2	5 5 5 2	1 2 21 13 42	1 3 6 5 2	6 4 5 2
7 5 6 6	5 5 6 3	1 2 6 1	1 2 21 13 42	1 3 6 5 2	6 4 5 2
SURVEY #214	5 01S	7 17 4	1 5 13 14 17	4 5 4 2	7 7 7 2
1 1 2 1	7 6 7 2	7 6 7 2	1 5 13 14 17	4 5 4 2	7 7 7 2
7 5 7 2	7 6 7 2	7 6 7 2	1 5 13 14 17	4 5 4 2	7 7 7 2
1 1 1 1	1 1 1 1	1 1 1 1	1 5 13 14 17	4 5 4 2	7 7 7 2
1 1 1 1	1 1 1 1	1 1 1 1	1 5 13 14 17	4 5 4 2	7 7 7 2
SURVEY #215	3 9 6 2	5 10 4	1 5 27 13 17	7 6 7 2	3 6 4 1
1 2 2 1	7 5 6 2	4 5 4 2	1 5 27 13 17	7 6 7 2	3 6 4 1
4 4 4 2	6 4 6 2	4 4 4 2	1 5 27 13 17	7 6 7 2	3 6 4 1
1 1 1 1	5 5 6 3	1 1 1 1	1 5 27 13 17	7 6 7 2	3 6 4 1
1 1 2 1	1 1 2 1	1 1 2 1	1 5 27 13 17	7 6 7 2	3 6 4 1
SURVEY #216	3 3 30	7 5 5	1 5 19 11 17	7 7 7 8	5 6 7 2
2 2 5 5	7 7 7 2	7 7 7 2	1 5 19 11 17	7 7 7 8	5 6 7 2
7 7 7 2	7 7 7 2	7 7 7 2	1 5 19 11 17	7 7 7 8	5 6 7 2
5 5 5 5	7 7 7 2	7 7 7 2	1 5 19 11 17	7 7 7 8	5 6 7 2
7 4 5 5	7 6 6 5	7 6 6 5	1 5 19 11 17	7 7 7 8	5 6 7 2
SURVEY #217	6 01P 40P	4 17 5 11 5	1 5 9 14 12 30	3 6 3 2	5 6 7 2
1 1 4 5	5 6 7 2	4 17 5 11 5	1 5 9 14 12 30	3 6 3 2	5 6 7 2
4 5 6 5	5 6 7 2	4 17 5 11 5	1 5 9 14 12 30	3 6 3 2	5 6 7 2
1 4 4 5	4 6 7 2	4 17 5 11 5	1 5 9 14 12 30	3 6 3 2	5 6 7 2
1 2 6 5	4 4 7 5	4 17 5 11 5	1 5 9 14 12 30	3 6 3 2	5 6 7 2
SURVEY #218	5 00E	7 17 4	1 5 15 11 14	6 5 7 2	7 6 7 2
1 2 5 2	7 7 7 2	7 6 7 2	1 5 15 11 14	6 5 7 2	7 6 7 2
7 6 7 2	7 6 7 2	7 6 7 2	1 5 15 11 14	6 5 7 2	7 6 7 2
3 3 3 1	7 6 7 2	7 6 7 2	1 5 15 11 14	6 5 7 2	7 6 7 2
1 1 3 1	7 6 7 2	7 6 7 2	1 5 15 11 14	6 5 7 2	7 6 7 2
SURVEY #219	5 01K 03P	7 19 6 24	4 5 25 13 27	5 6 6 5	5 4 6 2
4 3 6 2	7 6 7 2	7 5 6 6	4 5 25 13 27	5 6 6 5	5 4 6 2
6 6 6 5	6 6 6 5	6 6 6 5	4 5 25 13 27	5 6 6 5	5 4 6 2
4 4 7 2	6 6 6 5	6 6 6 5	4 5 25 13 27	5 6 6 5	5 4 6 2
3 2 6 2	6 6 6 5	6 6 6 5	4 5 25 13 27	5 6 6 5	5 4 6 2
1 1 6 2	6 6 6 5	6 6 6 5	4 5 25 13 27	5 6 6 5	5 4 6 2
SURVEY #220	5 0000	0 16 4	0 0 17 13 25	0 0 0 0	5 4 6 2
4 4 6 2	0 0 0 0	0 0 0 0	0 0 17 13 25	0 0 0 0	5 4 6 2
5 4 6 2	0 0 0 0	0 0 0 0	0 0 17 13 25	0 0 0 0	5 4 6 2
1 0 0 0	0 0 0 0	0 0 0 0	0 0 17 13 25	0 0 0 0	5 4 6 2
0 0 0 0	0 0 0 0	0 0 0 0	0 0 17 13 25	0 0 0 0	5 4 6 2

SURVEY #221	5 0 3 S 4 5 S	5 20 6 51	1 0 15 16	2 6 4 3	7 6 6 2
7 4 4 2	1 5 7 6	5 7 6 6	1 3 0 15	2 6 4 3	7 6 6 2
1 4 4 2	7 6 7 6	3 4 6 6	3 6 6 6	5 1 1 1	6 6 6 6
1 1 1 1	5 5 5 5	1 6 7 5	5 5 5 5	3 4 5 5	5 5 5 5
1 6 7 5	1 4 7 6	1 4 6 5	1 6 5 5	1 4 6 5	1 5 6 5
1 5 7 5	1 6 7 6	1 2 6 1	1 6 5 5	1 3 6 5	1 5 6 5
SURVEY #222	4 0 1 P 2	6 11 5 11	1 27 13 14	2 4 3 5	3 4 3 2
2 2 4 2	7 6 6 7	4 6 6 6	1 6 6 6	2 6 6 6	3 6 6 6
5 6 6 2	7 6 7 3	2 5 6 2	3 3 5 5	2 6 6 6	5 6 6 6
5 6 6 2	7 6 7 3	2 5 6 2	3 3 5 5	2 6 6 6	5 6 6 6
2 4 3 5	5 4 6 5	2 3 5 5	2 3 5 5	2 6 6 6	5 6 6 6
SURVEY #223	4 4 5 S 2	5 10 4	1 28 12 42	5 6 6 2	7 6 7 2
1 2 3 1	1 5 1 2	5 6 4 2	1 4 1 2	5 6 6 2	7 6 7 2
7 6 7 2	7 5 7 2	5 6 7 6	7 7 7 6	5 6 6 2	7 6 7 2
5 6 6 2	5 6 7 2	5 5 7 2	1 4 3 1	5 6 6 2	7 6 7 2
1 3 2 1	1 4 2 2	4 5 4 2	2 4 3 2	5 6 6 2	7 6 7 2
1 4 2 1	1 4 2 2	3 4 4 2	2 4 3 2	5 6 6 2	7 6 7 2
SURVEY #224	4 0 7 6	2 17 6 55	2 20 14 13	6 6 5 6	4 6 3 3
7 6 6 6	2 7 7 6	2 5 2 1	2 2 1 1	6 6 5 6	4 6 3 3
6 5 5 5	2 6 2 2	2 6 2 2	1 4 1 6	6 6 5 6	4 6 3 3
1 1 1 1	4 7 5 2	1 4 4 6	1 3 3 1	6 6 5 6	4 6 3 3
1 2 1 1	1 1 1 1	1 2 1 1	1 3 3 1	6 6 5 6	4 6 3 3
1 1 1 1	3 5 4 5	1 2 1 1	1 3 3 1	6 6 5 6	4 6 3 3
SURVEY #225	6 0 7 5	7 24 5 5	4 12 15 14	7 7 5 5	4 7 5 5
1 1 5 1	7 7 7 5	7 7 7 5	4 6 7 5	7 7 5 5	4 7 5 5
7 7 7 5	7 7 7 5	7 7 7 5	6 6 7 5	7 7 5 5	4 7 5 5
7 7 7 5	7 7 7 5	7 7 7 5	1 3 5 5	7 7 5 5	4 7 5 5
3 4 5 2	1 1 6 5	5 2 5 5	1 3 5 5	7 7 5 5	4 7 5 5
1 4 2 2	6 5 6 5	5 2 5 5	5 3 5 5	7 7 5 5	4 7 5 5
SURVEY #226	5 0 6 2	3 18 5 34	1 14 12 12	5 5 6 2	3 5 2 2
1 1 2 1	7 6 7 2	3 4 2 2	1 2 3 1	5 5 6 2	3 5 2 2
2 2 3 2	7 6 7 2	2 2 3 2	1 1 1 1	5 5 6 2	3 5 2 2
1 1 1 1	6 5 6 2	1 1 1 1	1 2 1 1	5 5 6 2	3 5 2 2
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	5 5 6 2	3 5 2 2
1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	5 5 6 2	3 5 2 2
SURVEY #227	5 0 1 P 0 3 S	6 23 5 11	6 13 14 13	7 7 7 5	4 5 5 2
1 1 3 1	6 7 7 5	6 7 7 5	6 7 7 5	7 7 7 5	4 5 5 2
7 7 7 5	6 7 7 5	6 7 7 5	6 7 7 5	7 7 7 5	4 5 5 2
5 6 6 2	6 7 7 5	6 7 7 5	6 7 7 5	7 7 7 5	4 5 5 2
2 2 2 5	1 1 1 5	2 2 2 5	2 2 2 5	7 7 7 5	4 5 5 2
5 5 6 2	5 6 6 5	3 5 5 5	3 6 6 5	7 7 7 5	4 5 5 2
SURVEY #228	5 9 7 2	6 11 5 24	2 14 12 12	2 4 4 5	5 4 6 2
4 5 5 7	6 6 7 2	6 5 7 2	2 4 5 2	2 4 4 5	5 4 6 2
4 5 5 7	6 6 7 2	6 5 7 2	2 4 5 2	2 4 4 5	5 4 6 2
1 0 0 0	5 5 7 2	5 5 7 2	2 4 5 2	2 4 4 5	5 4 6 2
2 2 5 2	1 1 5 2	2 2 5 2	2 4 5 2	2 4 4 5	5 4 6 2
1 2 4 3	1 1 5 2	2 2 5 2	2 4 5 2	2 4 4 5	5 4 6 2
SURVEY #229	6 0 1 S 2	5 22 4 2	1 14 11 12	7 6 7 2	4 5 7 2
3 2 3 2	7 6 7 2	5 6 6 2	1 5 6 2	7 6 7 2	4 5 7 2
5 6 6 2	7 6 7 2	5 6 6 2	1 5 6 2	7 6 7 2	4 5 7 2
4 5 6 2	6 6 6 2	1 5 6 2	1 5 6 2	7 6 7 2	4 5 7 2
2 2 4 2	1 2 4 3	1 2 4 3	1 2 4 3	7 6 7 2	4 5 7 2
1 2 4 1	1 2 4 3	1 2 4 3	1 2 4 3	7 6 7 2	4 5 7 2
SURVEY #230	4 0 3 S 2 5	4 8 6 55	1 29 13 14	4 5 5 2	3 4 3 2
1 1 3 1	4 5 5 5	4 5 5 5	1 3 6 2	4 5 5 2	3 4 3 2
5 5 6 2	5 5 5 5	5 5 5 5	1 3 6 2	4 5 5 2	3 4 3 2
1 4 5 1	5 5 5 5	5 5 5 5	1 3 6 2	4 5 5 2	3 4 3 2
1 1 1 1	5 5 5 5	5 5 5 5	1 3 6 2	4 5 5 2	3 4 3 2
1 1 1 1	5 5 5 5	5 5 5 5	1 3 6 2	4 5 5 2	3 4 3 2

SURVEY #231	5 03S 00E	1 15 4	1 19 14 31	4 6 6 2	7 6 7 2
667221	176722	5551	56722	154722	76722
33311	53462	5551	66664	11122	66722
1141	552	5551	33321	33342	76722
SURVEY #232	5 0 6 2 3	6 19 4 3	2 3 14 14 19	5 6 6 3	4 5 6 3
122322	66662	66662	11111	11111	56662
11111	66661	66661	11111	11111	56661
11111	2221	11111	11111	11111	11111
SURVEY #233	4 11P	5 15 5 34	1 6 15 13 13	5 4 5 5	4 6 5 5
336655	76752	5555	24432	56662	56662
334455	46665	33322	44332	22217	55551
1222	5555	1222	1111	2222	4122
SURVEY #234	4 0 7 2	1 12 4 1	1 4 21 13 59	1 6 6 2	6 5 7 2
114471	66722	44774	44771	11662	65722
115662	11666	11444	11221	11111	11331
11331	1111	4451	1111	1111	11231
1221	1111	1441	1111	1111	1111
SURVEY #235	4 03S	6 9 4 6	1 1 27 11 11	5 6 6 8	5 6 6 7
117671	66762	46667	56662	11551	76722
11555	76772	11666	11553	11111	11111
11111	11772	11111	11111	11111	11111
1251	1355	1251	1151	1155	1155
SURVEY #236	4 0 5 2	5 13 1 6	1 5 28 15 42	6 4 4 2	6 6 6 2
12221	4452	44556	54512	3446	66662
13445	4441	4446	44311	1441	4446
11445	4452	4441	1111	1111	1122
1445	3442	1241	1241	1241	1241
SURVEY #237	5 50E 10P	5 19 5 34	4 6 14 11 26	5 5 6 5	5 5 5 2
224455	55752	5555	33332	3445	66662
224455	55665	5555	33332	3445	66662
224455	55665	5555	33332	3445	66662
224455	55665	5555	33332	3445	66662
SURVEY #238	4 00E 60V	1 14 6 53	1 1 19 13 42	3 6 4 3	7 6 6 2
11555	24443	33323	11365	11326	76662
11555	24443	33323	11365	11326	76662
11555	24443	33323	11365	11326	76662
11555	24443	33323	11365	11326	76662
SURVEY #239	5 07S 03S	7 16 6 53	1 5 22 15 20	7 7 7 5	3 5 4 2
74772	77772	77772	77772	77772	77772
74772	77772	77772	77772	77772	77772
11111	11111	11111	11111	11111	11111
1457	1467	1125	1125	1125	1125
1111	1111	1111	1111	1111	1111
SURVEY #240	4 60S 61S 62S	14 4 2	3 2 14 11 20	6 5 6 2	5 4 5 2
13332	5552	5552	3452	2222	5552
13332	5552	5552	3452	2222	5552
13332	5552	5552	3452	2222	5552
13332	5552	5552	3452	2222	5552

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SURVEY #251	5 7 7 7 2 2 1 5	01S 21S 18 4	7 6 13 12 20 7 6 7 2 5	4 6 4 4 4 2
1 1 3 1	7 7 7 2 2 1 5	7 6 7 5	6 6 6 2 2 1 5	6 7 7 2 1 1 1
5 6 6 2	6 6 6 2 2 1 5	6 6 6 5 5 6 1	6 6 6 2 2 1 5	4 4 4 2 2 6 4
2 2 5 1	1 2 6	2 2 2 6 6 1	1 1 1 1 1 2 6	1 1 1 1 1 1 1
1 1 6 1	5 5 5 2 6	3 3 6 1	3 4 5 2 6	1 2 2 6 4 1
SURVEY #252	6 0 1 0 3 5 0 2 3 6 2 4	7 7 7 7 7 7 7 7 7 7 7 7	7 6 12 11 20 7 6 7 5	5 5 5 2
1 1 4 1	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	7 7 7 7 7 7 7 7 7 7 7 7	5 7 6 7 5 5 5 2
7 6 7 6	6 6 6 6 6 6 6 6 6 6 6 6	4 5 5 5 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1 1 1 1 1	5 6 7 5 5 5 1 2
3 4 4 2	7 7 7 7 7 7 7 7 7 7 7 7	4 4 4 4 4 4 4 4 4 4 4 4	2 2 2 2 2 2 2 2 2 2 2 2	3 1 1 1 1 1 1 1 1 1 1 1
1 5 6 1	2 3 5 5	2 3 7 7 7 7 7 7 7 7 7 7	1 1 1 1 1 1 1 1 1 1 1 1	7 1 7 6 7 6 7 6 7 6 7 6
2 2 5 2	4 4 5 5	1 2 6 6 6 6 6 6 6 6 6 6	2 2 2 2 2 2 2 2 2 2 2 2	1 2 2 2 2 2 2 2 2 2 2 2
SURVEY #253	5 0 1 0 5 0 2 1 4	7 6 6 6 6 6 6 6 6 6 6 6	4 4 13 12 32 6 5 5 2	5 6 5 2
5 4 4 7	7 6 6 6 6 6 6 6 6 6 6 6	5 4 5 2 2 2 2 2 2 2 2 2	4 4 4 2 2 2 2 2 2 2 2 2	5 6 7 2 2 2 2 2 2 2 2
6 6 6 2	6 6 6 6 6 6 6 6 6 6 6 6	3 3 3 3 3 3 3 3 3 3 3 3	1 1 1 1 1 1 1 1 1 1 1 1	6 5 5 2 2 2 2 2 2 2 2
6 6 5 2	6 6 6 6 6 6 6 6 6 6 6 6	2 2 2 2 2 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1
1 1 1 1	1 2 2 2 1 1	1 2 2 2 2 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1
1 2 1 1	1 2 2 2 1 1	1 2 2 2 2 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1
SURVEY #254	6 3 6 7 6 6 6 6 6 6 6 6	7 2 4 6 6 6 6 6 6 6 6 6	1 5 14 12 33 5 6 7 3 7	7 6 6 6 4 4 4 4 7
4 4 5 4	7 7 7 7 6 6 6 6 6 6 6 6	5 5 5 5 5 5 5 5 5 5 5 5	5 5 6 6 6 6 6 6 6 6 6 6	7 7 6 6 7 7 7 7 7 7 7 7
7 6 6 6	7 7 7 7 6 6 6 6 6 6 6 6	5 5 6 6 6 6 6 6 6 6 6 6	7 7 7 7 7 7 7 7 7 7 7 7	6 6 6 6 6 6 6 6 6 6 6 6
7 7 7 7	7 7 7 7 6 6 6 6 6 6 6 6	5 5 6 6 6 6 6 6 6 6 6 6	4 4 6 6 6 6 6 6 6 6 6 6	7 7 7 7 7 7 7 7 7 7 7 7
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5 5 7 4	5 6 6 5 4 7	7 6 6 7 4 7	7 6 7 6 6 6 6 6 6 6 6 6	7 6 7 6 7 6 7 6 7 6 7 6
SURVEY #255	4 1 1 1 2 3	7 6 7 2 3	1 1 20 14 15 3 7 2 3 2	2 3 4 1 7
1 1 7 1	7 6 7 2 3	4 3 4 3 2 2 2 2 2 2 2 2	1 1 2 1 1 1 1 1 1 1 1 1	5 6 6 6 6 6 6 6 6 6 6 6
2 4 4 3	5 5 6 6 3 3	2 2 2 2 2 2 2 2 2 2 2 2	1 1 2 1 1 1 1 1 1 1 1 1	3 3 3 3 3 3 3 3 3 3 3 3
2 2 2 2	5 6 6 3 3	1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 2 2 2 2 2 2
1 4 5 2	1 4 4 3	1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 2 2 2 2 2 2
1 3 1 1	3 4 4 3	6 4 6 3 2 7	1 3 1 1 1 1 1 1 1 1 1 1	1 3 1 1 1 1 1 1 1 1 1 1
SURVEY #256	5 5 0 5 5 5 5 5 5 5 5 5	7 6 7 7 7 7 7 7 7 7 7 7	1 14 13 14 5 5 3 5	7 6 7 5 5 5 5 5 5 5 5 5
1 1 7 1	6 6 6 6 5 5	6 6 6 6 5 5	3 4 5 5 3 5 5 5 5 5 5 5	7 6 7 5 5 5 5 5 5 5 5 5
4 6 6 5	7 7 7 7 5 5	5 6 6 6 5 5	4 5 5 5 5 5 5 5 5 5 5 5	7 6 7 5 5 5 5 5 5 5 5 5
3 5 5 5	5 6 6 7 5 5	5 6 6 7 5 5	1 1 1 1 1 1 1 1 1 1 1 1	7 6 7 5 5 5 5 5 5 5 5 5
6 5 6 5	7 6 7 5 5	7 6 7 5 5	7 6 7 5 5 5 5 5 5 5 5 5	7 6 7 5 5 5 5 5 5 5 5 5
SURVEY #257	5 0 0 5 2 3	3 3 3 3 3 3 3 3 3 3 3 3	1 15 11 13 5 4 4 2	4 3 5 2
1 1 3 1	4 4 5 2 3	3 3 3 3 3 3 3 3 3 3 3 3	1 1 2 1 1 1 1 1 1 1 1 1	5 4 5 2 2 2 2 2 2 2 2 2
4 3 3 2	6 6 6 6 2 2	1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1
1 1 1 1	1 1 6 6 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 2 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 2 2 2 2 2 2
1 1 6 1	1 1 3 1	1 1 5 1	1 1 2 1 1 1 1 1 1 1 1 1	1 1 2 2 2 2 2 2 2 2 2 2
SURVEY #258	6 0 1 0 3 0 4 3 0 5 11	5 7 7 7 7 7 7 7 7 7 7 7	5 12 15 12 7 7 7 5	5 6 5 2
4 5 6 5	6 6 6 6 5 5	5 5 5 5 5 5	4 6 6 6 6 6 6 6 6 6 6 6	7 7 7 5 5 5 5 5 5 5 5 5
5 6 5 5	6 6 6 7 5 5	5 6 6 6 5 5	3 3 3 3 3 3 3 3 3 3 3 3	5 6 6 5 5 5 5 5 5 5 5 5
5 6 5 5	6 6 6 7 5 5	5 6 6 6 5 5	5 6 6 6 6 6 6 6 6 6 6 6	4 6 6 5 5 5 5 5 5 5 5 5
3 4 4 5	3 5 3 5	5 6 6 6	2 3 3 3 3 3 3 3 3 3 3 3	4 6 6 5 5 5 5 5 5 5 5 5
SURVEY #259	4 6 7 2 2 2 6	4 6 5 5 4 4 2 2 2 2 2 2	3 4 20 11 12 4 5 2 2	5 6 5 2
7 6 7 2	7 6 6 6 3 2	4 6 5 5 4 4 2 2 2 2 2 2	3 3 2 2 2 2 2 2 2 2 2 2	7 6 6 6 6 6 6 6 6 6 6 6
2 6 6 2	5 6 6 6 2 2	4 6 5 5 4 4 2 2 2 2 2 2	1 1 2 2 2 2 2 2 2 2 2 2	3 4 4 4 4 4 4 4 4 4 4 4
1 3 2 1	1 3 2 2 1 6	2 4 4 2 2 1	1 1 2 2 2 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1
1 4 1 1	3 5 3 2	1 3 4 1	1 2 4 1	1 1 1 1 1 1 1 1 1 1 1 1
SURVEY #260	5 5 0 5 3 3 3 3 3 3 3 3	7 7 7 7 7 7 7 7 7 7 7 7	7 14 15 21 7 6 6 3	7 5 5 2
1 1 1 1	7 6 7 7 7 7 7 7 7 7 7 7	7 6 7 7 7 7 7 7 7 7 7 7	1 1 1 1 1 1 1 1 1 1 1 1	7 6 6 3 3 3 3 3 3 3 3 3
1 1 1 1	7 6 6 6 5 5 5 5 5 5 5 5	7 6 6 6 5 5 5 5 5 5 5 5	1 1 1 1 1 1 1 1 1 1 1 1	7 6 6 3 3 3 3 3 3 3 3 3
1 1 1 1	7 5 6 6 2 2 2 2 2 2 2 2	7 5 6 6 2 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1	7 6 6 3 3 3 3 3 3 3 3 3
1 1 1 1	4 4 5 3	1 4 5 3	1 2 4 3	1 1 1 1 1 1 1 1 1 1 1 1

SURVEY #261	5 035	5 19 5 47	22 13 47	5 6 5 5	5 6 6 2
6652	6662	6652	4642	5452	6662
5552	5552	5552	5535	5532	5552
4442	4442	4442	4442	4442	4442
1141	4445	4445	4442	4442	4442
SURVEY #262	5 50	21 4	14 14 31	7 6 6 2	5 3 5 2
1162	6572	5672	4662	1112	6572
2252	6562	1152	2252	2125	5672
1242	5462	5562	1252	1125	1252
1331	2462	5562	5562	5562	5562
SURVEY #263	5 0	20 4	15 15 25	7 6 7 2	4 5 5 2
1451	7666	7666	4452	6452	7666
6672	6652	6652	5552	5552	6652
5562	7666	5562	2211	4411	5566
2452	2552	2452	1111	1111	2452
2352	3552	2352	1111	2352	3552

APPENDIX I  
SURVEY RESULTS

REPORTED FREQUENCIES

In this section we will present the frequencies of the responses to the questions in our survey. Initial frequencies were obtained which reflect all responses and are displayed in the second part of this appendix. Every respondent did not answer every question. Therefore missing data is listed as zero.

Demographics

Rank--the respondents reported ranks are displayed below. Three respondents (one percent) did not identify her/his rank.

<u>RANK</u>	<u>GRADE</u>	<u>NUMBER</u>	<u>PERCENT</u>
Rear Admiral	0-7	1	.38
Captain	0-6	42	16.00
Commander	0-5	101	38.00
Lieutenant Commander	0-4	101	38.00
Lieutenant	0-3	16	6.00

Subspecialty--seventy respondents (twenty-seven percent) left this question blank. We were unable to determine if these individuals did not have a declared subspecialty or if she/he did not know the subspecialty code. Due to this

extraordinarily high percentage, we decided not to attempt any analysis based on this category. Several individuals identified two, three or more subspecialties.

Length of Service--the mean LOS for the survey was 15.8 years with the mode being 17 (frequency of 25). The range for LOS was four to thirty-four years. The complete distribution follows.

Degree--the distribution of the highest degree obtained by our respondents are identified as shown below.

DEGREE	NUMBER	PERCENT
Diploma	11	4.00
Bachelor of Arts	3	1.00
Bachelor of Science--Nursing	115	44.00
Bachelor of Science--Other	4	2.00
Masters of Science--Nursing	69	26.00
Masters--Other	56	21.00
Doctorate	1	.30

Thirteen respondents (five percent) listed two degrees.

Position--the positions of our respondents are identified below. Six individuals (two percent) did not identify her/his position.



POSITION	NUMBER	PERCENT
Director Nursing Service	28	11.00
Assistant DNS	11	4.00
Department Head	34	13.00
Area Supervisor	21	8.00
Division Officer	9	3.00
Command Quality Assurance	21	8.00
Nursing Quality Assurance	4	2.00
Education Coordinator	16	6.00
Clinical Instructor	1	0.38
Infection Control	2	0.76
Hospital Staffing Detailers	4	2.00
Charge Nurse	15	6.00
Staff Nurse	1	0.38
Clinic Nurse	28	11.00
Recruiter	16	6.00
2XXX	18	7.00
Geographic Quality Assurance	5	2.00
Geographic Education	1	0.38
Nursing Detailer	3	1.00
Research	1	0.38
Other	18	7.00

The category "other" includes positions which did not fit into any of the above categories. Rather than listing each position individually, they were placed in this "other" category (see Appendix L).

Time Served in Current Position--the mode was 12-24 months, with seventy-nine (thirty percent) in this category. Of interest was the number of individuals in the less than six months category. There were 62 individuals (twenty-four percent) in this category.

Duty Station--the respondents were fairly evenly distributed in relation to the number of surveys sent to each facility.

## SURVEY QUESTIONS AND RESPONSE

1. Nursing Theory--applying theories of nursing, administration, and leadership to facilitate delivery of patient care.

	Frequency	Percent
<u>Utilizing</u>		
No answer	1	0.380
Not at all	29	11.027
Only rarely	23	8.745
Sometimes	29	11.027
Moderately often	25	9.506
Quite a bit	43	16.350
Almost all the time	38	14.449
Constantly	75	28.517
<u>Capability</u>		
No answer	1	.38
Not capable at all	1	.38
Extremely Limited	3	1.14
Not too good	3	1.14
Fairly good	20	7.61
Pretty good	57	21.67
Very good	130	49.43
Expert	48	18.25
<u>Importance</u>		
No answer	1	.38
Not needed	8	3.04
Only of minor importance	17	6.46
Somewhat important	16	6.08
Fairly important	21	7.99
Very important	37	14.07
Extremely important	64	24.34
Essential or critical	99	37.64
<u>Obtained</u>		
No answer	0	0.00
Not applicable	4	1.37
OJT and/or experience	128	43.69
Undergraduate education	58	19.80
NPS education	0	0.00
Other graduate education	76	25.94
Part-time or short technical course	14	4.78
Other	11	3.75
Inappropriate response	2	0.68

2. Technical writing, Navy correspondence, official correspondence.

Utilizing

No answer	1	0.380
Not at all	1	0.380
Only rarely	11	4.183
Sometime	34	12.928
Moderately often	31	11.787
Quite a bit	71	26.996
Almost all the time	36	13.688
Constantly	78	29.658

Capability

No answer	1	.380
Not capable at all	0	0.000
Extremely limited	7	2.662
Not too good	20	7.605
Fairly good	50	19.011
Pretty good	69	26.236
Very good	102	38.783
Expert	14	5.323

Importance

No answer	1	0.380
Only of minor importance	6	2.281
Somewhat important	13	4.943
Fairly important	25	9.506
Very important	52	19.772
Extremely important	81	30.798
Essential or critical	85	32.319

Obtained

Not applicable	5	1.82
OJT and/or experience	238	86.55
Undergraduate education	7	2.55
NPS education	2	0.73
Other graduate education	6	2.18
Part-time or short technical course	11	4.00
Other	6	2.18



3. Computer programming techniques and software development principles. Use of microcomputers--word processing, data base management, spread sheets, and data display.

Utilizing

No answer	2	0.760
Not at all	116	44.106
Only rarely	40	15.209
Sometimes	34	12.928
Moderately often	18	6.844
Quite a bit	25	9.506
Almost all the time	15	5.703
Constantly	13	4.943

Capability

No answer	3	1.141
Not capable at all	63	23.954
Extremely limited	79	30.038
Not too good	32	12.167
Fairly good	45	17.110
Pretty good	26	9.886
Very good	14	5.323
Expert	1	0.380

Importance

No answer	3	1.141
Not needed	16	6.084
Only of minor importance	30	11.407
Somewhat important	35	13.308
Fairly important	50	19.011
Very important	57	21.673
Extremely important	46	17.490
Essential or critical	26	9.886

Obtained

No answer	4	1.47
Not applicable	93	34.19
OJT and/or experience	115	42.28
Undergraduate education	3	1.10
NPS education	4	1.47
Other graduate education	15	5.51
Part-time or short technical course	22	8.09
Other	16	5.88

#### 4. Nursing management strategies for effective nursing administration

##### a. staffing, staff development, patient classification

###### Utilizing

No answer	2	0.760
Not at all	56	21.293
Only rarely	27	10.266
Sometimes	19	7.224
Moderately often	14	5.323
Quite a bit	41	15.589
Almost all the time	26	9.886
Constantly	78	29.658

###### Capability

No answer	2	0.760
Extremely limited	2	0.760
Not too good	1	0.380
Fairly good	21	7.985
Pretty good	66	25.095
Very good	125	47.529
Expert	46	17.490

###### Importance

No answer	2	0.760
Not needed	22	8.365
Only of minor importance	9	3.422
Somewhat important	14	5.323
Fairly important	8	3.042
Very important	40	15.209
Extremely important	78	29.658
Essential or critical	90	34.221

###### Obtained

No answer	2	0.68
Not applicable	7	2.39
OJT and/or experience	214	73.04
Undergraduate education	16	5.46
NPS education	2	0.68
Other graduate education	29	9.90
Part-time or short technical course	18	6.14
Other	5	1.71

4b. nursing organizational structure, effectiveness,  
evaluation, includes quality assurance

Utilizing

No answer	1	0.380
Not at all	36	13.688
Only rarely	11	4.183
Sometimes	17	6.464
Moderately often	25	9.506
Quite a bit	55	20.913
Almost all the time	39	14.829
Constantly	79	30.038

Capability

No answer	1	0.380
Not capable at all	1	0.380
Extremely limited	3	1.141
Not too good	10	3.802
Fairly good	25	9.506
Pretty good	73	27.757
Very good	112	42.586
Expert	38	14.449

Importance

No answer	1	0.380
Not needed	17	6.464
Only of minor importance	8	3.042
Somewhat important	7	2.662
Fairly important	21	7.985
Very important	34	12.928
Extremely important	86	32.700
Essential or critical	89	33.840

Obtained

No answer	2	.67
Not applicable	7	2.34
OJT and/or experience	174	58.19
Undergraduate education	20	6.69
NPS education	3	1.00
Other graduate education	47	15.72
Part-time or short technical course	39	13.04
Other	7	0.33

#### 4c. nursing service budget

##### Utilizing

No answer	1	0.380
Not at all	115	43.726
Only rarely	29	11.027
Sometimes	26	9.886
Moderately often	19	7.224
Quite a bit	27	10.266
Almost all the time	20	7.605
Constantly	25	9.506
Inappropriate response	1	0.380

##### Capability

No answer	2	0.760
Not capable at all	13	4.943
Extremely limited	34	12.928
Not too good	29	11.027
Fairly good	49	18.631
Pretty good	65	24.715
Very good	46	17.490
Expert	24	9.125

##### Importance

No answer	2	0.760
Not needed	32	12.167
Only of minor importance	18	6.844
Somewhat important	17	6.464
Fairly important	28	10.646
Very important	48	18.251
Extremely important	62	23.574
Essential or critical	55	20.913

##### Obtained

No answer	2	0.73
Not applicable	45	16.48
OJT and/or experience	177	64.84
Undergraduate education	6	2.20
NPS education	4	1.52
Other graduate education	27	9.89
Part-time or short technical course	6	2.20
Other	6	2.20



#### 4d. labor relations and health law

##### Utilizing

No answer	2	0.760
Not at all	74	28.137
Only rarely	35	13.308
Sometimes	49	18.631
Moderately often	34	12.928
Quite a bit	31	11.787
Almost all the time	15	5.703
Constantly	23	8.745

##### Capability

No answer	3	1.141
Not capable at all	12	4.563
Extremely limited	41	15.589
Not too good	31	11.787
Fairly good	68	25.856
Pretty good	55	20.913
Very good	45	17.110
Expert	8	3.042

##### Importance

No answer	3	1.141
Not needed	23	8.745
Only of minor importance	14	5.323
Somewhat important	26	9.886
Fairly important	42	15.970
Very important	77	29.278
Extremely important	37	14.068
Essential or critical	41	15.589

##### Obtained

No answer	2	0.72
Not applicable	37	13.26
OJT and/or experience	134	48.03
Undergraduate education	13	4.66
NPS education	2	0.72
Other graduate education	49	17.56
Part-time or short technical course	33	11.83
Other	9	3.23

## 5. Organizational management in the military environment

### a. basic management principles, managerial decision making, planning and control

#### Utilizing

Not at all	6	2.281
Only rarely	4	1.521
Sometimes	3	1.141
Moderately often	8	3.042
Quite a bit	32	12.167
Almost all the time	59	22.433
Constantly	151	57.414

#### Capability

Not capable at all	2	0.760
Extremely limited	2	0.760
Not too good	1	0.380
Fairly good	16	6.084
Pretty good	55	20.913
Very good	139	52.852
Expert	48	18.251

#### Importance

No answer	1	0.380
Not needed	2	0.760
Somewhat important	1	0.380
Fairly important	5	1.901
Very important	25	9.506
Extremely important	84	31.939
Essential or critical	145	55.133

#### Obtained

Not applicable	3	0.95
OJT and/or experience	141	44.62
Undergraduate education	35	12.54
NPS education	6	1.90
Other graduate education	87	27.53
Part-time or short technical course	35	11.08
Other	9	2.85

5b. organizational structure, organizational effectiveness	planned	change,
<u>Utilizing</u>		
Not at all	10	3.802
Only rarely	12	4.563
Sometimes	14	5.323
Moderately often	21	7.985
Quite a bit	49	18.631
Almost all the time	61	23.194
Constantly	96	36.502
<u>Capability</u>		
Not capable at all	3	1.141
Extremely limited	9	3.422
Not too good	3	1.141
Fairly good	36	13.688
Pretty good	56	21.293
Very good	114	43.346
Expert	42	15.970
<u>Importance</u>		
No answer	1	0.380
Not needed	3	1.141
Only of minor importance	1	0.380
Somewhat important	6	2.281
Fairly important	16	6.084
Very important	37	14.068
Extremely important	97	36.882
Essential or critical	102	38.783
<u>Obtained</u>		
Not applicable	5	1.64
OJT and/or experience	145	47.70
Undergraduate education	27	8.80
NPS education	6	1.97
Other graduate education	86	28.29
Part-time or short technical course	28	9.21
Other	7	2.30

5c. individual and group behavior, motivation, communication, group dynamics, and leadership

Utilizing

Not at all	3	1.141
Only rarely	4	1.521
Sometimes	8	3.042
Moderately often	13	4.943
Quite a bit	24	9.125
Almost all the time	76	28.897
Constantly	135	51.331

Capability

Not capable at all	1	0.380
Extremely limited	2	0.760
Not too good	2	0.760
Fairly good	21	7.985
Pretty good	60	22.814
Very good	124	47.148
Expert	53	20.152

Importance

No answer	1	0.380
Not needed	1	0.380
Only of minor importance	2	0.760
Fairly important	5	1.901
Very important	22	8.365
Extremely important	85	32.319
Essential or critical	147	55.894

Obtained

Not applicable	2	0.63
OJT and/or experience	133	42.22
Undergraduate education	55	17.46
NPS education	6	1.90
Other graduate education	76	24.13
Part-time or short technical course	34	10.79
Other	9	2.86



5d. job analysis--analysis of job requirements

Utilizing

Not at all	14	5.323
Only rarely	25	9.506
Sometimes	49	18.631
Moderately often	47	17.871
Quite a bit	50	19.011
Almost all the time	38	14.449
Constantly	40	15.209

Capability

Not capable at all	7	2.662
Extremely limited	9	3.422
Not too good	20	7.605
Fairly good	60	22.814
Pretty good	67	25.475
Very good	72	27.376
Expert	28	10.646

Importance

No answer	1	0.380
Not needed	7	2.662
Only of minor importance	7	2.662
Somewhat important	19	7.224
Fairly important	25	9.506
Very important	77	29.278
Extremely important	73	27.757
Essential or critical	54	20.532

Obtained

Not applicable	14	4.75
OJT and/or experience	181	61.36
Undergraduate education	16	5.42
NPS education	5	1.69
Other graduate education	43	14.58
Part-time or short technical course	28	9.49
Other	8	2.71

- 5e. job design--specifying individual work tasks,  
specifying the method of performing the work tasks,  
and combining work tasks into jobs for assignment  
to individuals

Utilizing

No answer	1	0.380
Not at all	24	9.125
Only rarely	23	8.745
Sometimes	37	14.068
Moderately often	34	12.928
Quite a bit	55	20.913
Almost all the time	43	16.350
Constantly	46	17.490

Capability

No answer	1	0.380
Not capable at all	7	2.662
Extremely limited	7	2.662
Not too good	12	4.563
Fairly good	36	13.688
Pretty good	81	30.798
Very good	96	36.502
Expert	23	8.745

Importance

No answer	2	0.760
Not needed	12	4.563
Only of minor importance	11	4.183
Somewhat important	17	6.464
Fairly important	24	9.125
Very important	66	25.095
Extremely important	78	29.658
Essential or critical	53	20.152

Obtained

Not applicable	15	3.81
OJT and/or experience	179	45.43
Undergraduate education	119	30.20
NPS education	5	1.27
Other graduate education	47	11.93
Part-time or short technical course	23	5.84
Other	6	1.52

6. Personnel management functions:

6a. acquisition, recruiting, selection of military personnel

Utilizing

Not at all	99	37.643
Only rarely	51	19.392
Sometimes	38	14.449
Moderately often	19	7.224
Quite a bit	18	6.844
Almost all the time	9	3.422
Constantly	29	11.027

Capability

No answer	5	1.901
Not capable at all	12	4.563
Extremely limited	17	6.464
Not too good	9	3.422
Fairly good	53	20.152
Pretty good	62	23.574
Very good	75	28.517
Expert	29	11.027
Inappropriate response	1	0.380

Importance

No answer	2	0.760
Not needed	34	12.928
Only of minor importance	25	9.506
Somewhat important	18	6.844
Fairly important	25	9.506
Very important	44	16.730
Extremely important	51	19.392
Essential or critical	62	23.574
Inappropriate response	2	0.760

Obtained

No answer	7	2.57
Not applicable	53	19.49
OJT and/or experience	175	64.34
Undergraduate education	2	0.74
NPS education	4	1.47
Other graduate education	11	4.04
Part-time or short technical course	12	4.41
Other	8	2.94

6b. assignment, development, education, training

Utilizing

Not at all	17	6.464
Only rarely	8	3.042
Sometimes	24	9.125
Moderately often	27	10.266
Quite a bit	54	20.532
Almost all the time	48	18.251
Constantly	85	32.319

Capability

Not capable at all	1	0.380
Extremely limited	2	0.760
Not too good	1	0.380
Fairly good	29	11.027
Pretty good	71	26.996
Very good	108	41.065
Expert	51	19.392

Importance

Not needed	6	2.281
Only of minor importance	2	0.760
Somewhat important	6	2.281
Fairly important	11	4.183
Very important	39	14.829
Extremely important	82	31.179
Essential or critical	117	44.487

Obtained

No answer	1	0.33
Not applicable	4	1.32
OJT and/or experience	192	63.37
Undergraduate education	19	6.27
NPS education	4	1.32
Other graduate education	44	14.52
Part-time or short technical course	30	9.90
Other	8	2.64
Inappropriate response	1	0.33



6c. retention, compensation, pay level and structure,  
retirement

Utilizing

No answer	1	0.380
Not at all	93	35.361
Only rarely	48	18.251
Sometimes	41	15.589
Moderately often	19	7.224
Quite a bit	31	11.787
Almost all the time	13	4.943
Constantly	17	6.464

Capability

No answer	6	2.281
Not capable at all	26	9.886
Extremely limited	24	9.125
Not too good	24	9.125
Fairly good	67	25.475
Pretty good	58	22.053
Very good	46	17.490
Expert	12	4.563

Importance

No answer	5	1.901
Not needed	43	16.350
Only of minor importance	21	7.985
Somewhat important	26	9.886
Fairly important	25	9.506
Very important	58	22.053
Extremely important	45	17.110
Essential or critical	40	15.209

Obtained

No answer	6	2.21
Not applicable	63	23.25
OJT and/or experience	165	60.89
Undergraduate education	3	1.11
NPS education	2	0.74
Other graduate education	9	3.32
Part-time or short technical course	17	6.27
Other	- 6	

# 6d. performance appraisal and evaluation

## Utilizing

Not at all	13	4.943
Only rarely	16	6.084
Sometimes	11	4.183
Moderately often	29	11.027
Quite a bit	59	22.433
Almost all the time	47	17.871
Constantly	88	33.460

## Capability

Not capable at all	2	0.760
Extremely limited	1	0.380
Fairly good	15	5.703
Pretty good	67	25.475
Very good	122	46.388
Expert	56	21.293

## Importance

Not needed	5	1.901
Only of minor importance	7	2.662
Somewhat important	2	0.760
Fairly important	7	2.662
Very important	33	12.548
Extremely important	78	29.658
Essential or critical	131	49.810

## Obtained

Not applicable	5	1.63
OJT and/or experience	221	72.22
Undergraduate education	9	2.94
NPS education	2	0.65
Other graduate education	24	7.84
Part-time or short technical course	37	12.09
Other	8	2.61

7. Strategic planning--mission development, determining broad strategic objectives and general strategies for the organization and deciding what resources will be needed and how they will be allocated

Utilizing

No answer	1	0.380
Not at all	63	23.954
Only rarely	36	13.688
Sometimes	31	11.787
Moderately often	30	11.407
Quite a bit	42	15.970
Almost all the time	21	7.985
Constantly	39	14.829

Capability

No answer	2	0.760
Not capable at all	14	5.323
Extremely limited	31	11.787
Not too good	20	7.605
Fairly good	47	17.871
Pretty good	68	25.856
Very good	63	23.954
Expert	18	6.844

Importance

No answer	2	0.760
Not needed	22	8.365
Only of minor importance	16	6.084
Somewhat important	13	4.943
Fairly important	27	10.266
Very important	43	16.350
Extremely important	61	23.194
Essential or critical	79	30.038

Obtained

No answer	3	1.00
Not applicable	44	14.38
OJT and/or experience	162	53.82
Undergraduate education	8	2.61
NPS education	6	1.99
Other graduate education	47	15.61
Part-time or short technical course	24	7.97
Other	7	2.33

8. Nursing Research--identification of researchable nursing problems in providing health care delivery; includes elementary statistics, overview of research process, styles of researchers, logic, ethic, philosophy, and tools

Utilizing

No answer	1	0.380
Not at all	144	54.753
Only rarely	58	22.053
Sometimes	37	14.068
Moderately often	10	3.802
Quite a bit	8	3.042
Almost all the time	2	0.760
Constantly	3	1.141

Capability

No answer	2	0.760
Not capable at all	26	9.886
Extremely limited	47	17.871
Not too good	40	15.209
Fairly good	65	24.715
Pretty good	53	20.152
Very good	27	10.266
Expert	3	1.141

Importance

No answer	1	0.380
Not needed	40	15.209
Only of minor importance	28	10.646
Somewhat important	45	17.110
Fairly important	45	17.110
Very important	63	23.954
Extremely important	27	10.266
Essential or critical	14	5.323

Obtained

No answer	3	1.08
Not applicable	63	22.74
OJT and/or experience	39	14.08
Undergraduate education	59	21.30
NPS education	6	2.17
Other graduate education	100	36.10
Part-time or short technical course	5	1.81
Other	1	0.36
Inappropriate response	1	0.36



9. Computer based statistical analysis--fundamental statistical and probability theories and techniques

Utilizing

No answer	1	0.380
Not at all	177	67.300
Only rarely	34	12.928
Sometimes	21	7.985
Moderately often	14	5.323
Quite a bit	11	4.183
Almost all the time	2	0.760
Constantly	3	1.141

Capability

No answer	2	0.760
Not capable at all	92	34.981
Extremely limited	77	29.278
Not too good	23	8.745
Fairly good	32	12.167
Pretty good	25	9.506
Very good	8	3.042
Expert	3	1.141
Inappropriate response	1	0.380

Importance

No answer	4	1.521
Not needed	56	21.293
Only of minor importance	36	13.688
Somewhat important	43	16.350
Fairly important	41	15.589
Very important	50	19.011
Extremely important	27	10.266
Essential or critical	5	1.901
Inappropriate response	1	0.380

Obtained

No answer	3	1.12
Not applicable	127	47.57
OJT and/or experience	48	17.98
Undergraduate education	23	8.61
NPS education	6	2.25
Other graduate education	44	26.48
Part-time or short technical course	12	4.49
Other	3	1.12
Inappropriate response	1	0.37

10. Statistical methods for analyzing manpower problems--  
 use and interpretation of methods such as forecasting, techniques applied to large data sets, use of sophisticated computer packages

Utilizing

No answer	2	0.760
Not at all	192	73.004
Only rarely	29	11.027
Sometimes	17	6.464
Moderately often	5	1.901
Quite a bit	10	3.802
Almost all the time	4	1.521
Constantly	4	1.521

Capability

No answer	5	1.901
Not capable at all	110	41.825
Extremely limited	72	27.376
Not too good	23	8.745
Fairly good	24	9.125
Pretty good	16	6.084
Very good	13	4.943

Importance

No answer	7	2.662
Not needed	65	24.715
Only of minor importance	33	12.548
Somewhat important	42	15.970
Fairly important	36	13.688
Very important	51	19.392
Extremely important	18	6.844
Essential or critical	11	4.183

Obtained

No answer	6	2.19
Not applicable	148	54.01
OJT and/or experience	58	21.17
Undergraduate education	9	3.28
NPS education	5	1.82
Other graduate education	36	13.14
Part-time or short technical course	11	4.01
Other	1	0.36

11. Health Policy--impact of legislative system and process on health care systems. Analysis of health care delivery systems in the U.S. and their effects on health care delivery.

Utilizing

No answer	4	1.521
Not at all	125	47.529
Only rarely	43	16.350
Sometimes	33	12.548
Moderately often	20	7.605
Quite a bit	18	6.844
Almost all the time	10	3.802
Constantly	10	3.802

Capability

No answer	6	2.281
Not capable at all	59	22.433
Extremely limited	64	24.335
Not too good	21	7.985
Fairly good	58	22.053
Pretty good	30	11.407
Very good	22	8.365
Expert	3	1.141

Importance

No answer	7	2.662
Not needed	40	15.209
Only of minor importance	30	11.407
Somewhat important	37	14.068
Fairly important	45	17.110
Very important	51	19.392
Extremely important	34	12.928
Essential or critical	19	7.224

Obtained

No answer	6	2.19
Not applicable	88	32.12
OJT and/or experience	81	29.56
Undergraduate education	17	6.20
NPS education	2	0.73
Other graduate education	56	20.44
Part-time or short technical course	5	1.82
Other	19	6.93

12. Accounting--general principles of accounting applied to health care institutions

Utilizing

No answer	2	0.760
Not at all	167	63.498
Only rarely	40	15.209
Sometimes	24	9.125
Moderately often	15	5.703
Quite a bit	7	2.662
Almost all the time	4	1.521
Constantly	4	1.521

Capability

No answer	5	1.901
Not capable at all	77	29.278
Extremely limited	65	24.715
Not too good	38	14.449
Fairly good	45	17.110
Pretty good	22	8.365
Very good	8	3.042
Expert	3	1.141

Importance

No answer	6	2.281
Not needed	67	25.475
Only of minor importance	35	13.308
Somewhat important	28	10.646
Fairly important	41	15.589
Very important	41	15.589
Extremely important	33	12.548
Essential or critical	12	4.563

Obtained

No answer	6	2.20
Not applicable	110	40.29
OJT and/or experience	77	28.21
Undergraduate education	19	6.96
NPS education	6	2.20
Other graduate education	43	15.75
Part-time or short technical course	9	3.30
Other	3	1.10

### 13. Finance and budgeting

a. accounting concepts, cost accounting, budget development

#### Utilizing

No answer	2	0.760
Not at all	109	41.445
Only rarely	46	17.490
Sometimes	41	15.589
Moderately often	28	10.646
Quite a bit	22	8.365
Almost all the time	7	2.662
Constantly	8	3.042

#### Capability

No answer	4	1.521
Not capable at all	54	20.532
Extremely limited	62	23.574
Not too good	37	14.068
Fairly good	49	18.631
Pretty good	33	12.548
Very good	20	7.605
Expert	4	1.521

#### Importance

No answer	5	1.901
Not needed	44	16.730
Only of minor importance	21	7.985
Somewhat important	23	8.745
Fairly important	38	14.449
Very important	55	20.913
Extremely important	51	19.392
Essential or critical	26	9.886

#### Obtained

No answer	5	1.8
Not applicable	72	26.5
OJT and/or experience	117	43.17
Undergraduate education	19	7.01
NPS education	7	2.58
Other graduate education	40	14.76
Part-time or short technical course	8	2.95
Other	3	1.11



13b. cost-benefit analysis, cost analysis for decision making, capital budgeting

Utilizing

No answer	3	1.141
Not at all	140	53.232
Only rarely	47	17.871
Sometimes	30	11.407
Moderately often	11	4.183
Quite a bit	14	5.323
Almost all the time	14	5.323
Constantly	4	1.521

Capability

No answer	6	2.281
Not capable at all	76	28.897
Extremely limited	58	22.053
Not too good	30	11.407
Fairly good	46	17.490
Pretty good	23	8.745
Very good	21	7.985
Expert	3	1.141

Importance

No answer	7	2.662
Not needed	58	22.053
Only of minor importance	22	8.365
Somewhat important	28	10.646
Fairly important	34	12.928
Very important	48	18.251
Extremely important	42	15.970
Essential or critical	24	9.125

Obtained

No answer	7	2.57
Not applicable	104	38.24
OJT and/or experience	84	30.88
Undergraduate education	14	5.15
NPS education	6	2.21
Other graduate education	46	16.91
Part-time or short technical course	11	4.04

13c. resource allocation in the Defense sector, Defense  
budget preparation

Utilizing

No answer	2	0.760
Not at all	207	78.707
Only rarely	26	9.886
Sometimes	8	3.042
Moderately often	6	2.281
Quite a bit	5	1.901
Almost all the time	4	1.521
Constantly	5	1.901

Capability

No answer	6	2.281
Not capable at all	141	53.612
Extremely limited	47	17.271
Not too good	23	8.745
Fairly good	21	7.985
Pretty good	10	3.802
Very good	12	4.563
Expert	3	1.141

Importance

No answer	7	2.662
Not needed	107	40.684
Only of minor importance	18	6.844
Somewhat important	21	7.985
Fairly important	29	11.027
Very important	25	9.506
Extremely important	33	12.548
Essential or critical	23	8.745

Obtained

No answer	7	2.61
Not applicable	103	60.07
OJT and/or experience	63	23.51
Undergraduate education	3	1.12
NPS education	5	1.87
Other graduate education	17	6.34
Part-time or short technical course	7	2.61
Other	5	1.87

14. Economic decision making--basic economic concepts involved in the decision processes of individuals and groups faced with scarcity of resources

Utilizing

No answer	3	1.141
Not at all	105	39.924
Only rarely	33	12.548
Sometimes	36	13.688
Moderately often	21	7.985
Quite a bit	32	12.167
Almost all the time	15	5.703
Constantly	18	6.844

Capability

No answer	4	1.521
Not capable at all	59	22.433
Extremely limited	52	19.772
Not too good	24	9.125
Fairly good	45	17.110
Pretty good	45	17.110
Very good	26	9.886
Expert	8	3.042

Importance

No answer	5	1.901
Not needed	49	18.631
Only of minor importance	23	8.745
Somewhat important	26	9.886
Fairly important	37	14.068
Very important	42	15.970
Extremely important	48	18.251
Essential or critical	33	12.548

Obtained

No answer	5	1.82
Not applicable	79	28.73
OJT and/or experience	125	45.45
Undergraduate education	12	4.36
NPS education	7	2.55
Other graduate education	37	13.45
Part-time or short technical course	7	2.55
Other	2	0.73
Inappropriate response	1	0.36

15. Market analysis--supply and demand, wage determination, unemployment, inflation, economic analysis of manpower

Utilizing

No answer	2	0.760
Not at all	196	74.525
Only rarely	28	10.646
Sometimes	16	6.084
Moderately often	3	1.141
Quite a bit	6	2.281
Almost all the time	4	1.521
Constantly	8	3.042

Capability

No answer	6	2.281
Not capable at all	104	39.544
Extremely limited	71	26.996
Not too good	27	10.266
Fairly good	26	9.886
Pretty good	19	7.224
Very good	7	2.662
Expert	3	1.141

Importance

No answer	7	2.662
Not needed	101	38.403
Only of minor importance	33	12.548
Somewhat important	28	10.646
Fairly important	32	12.167
Very important	18	6.844
Extremely important	32	12.167
Essential or critical	12	4.563

Obtained

No answer	8	2.96
Not applicable	142	52.59
OJT and/or experience	52	19.26
Undergraduate education	10	3.70
NPS education	5	1.85
Other graduate education	40	14.81
Part-time or short technical course	7	2.59
Other	6	2.22

16. Problem-solving and decision-making models--decision theory, quantitative techniques appropriate for management analysis, project scheduling, inventory, and simulation

Utilizing

No answer	4	1.521
Not at all	84	31.939
Only rarely	34	12.928
Sometimes	32	12.167
Moderately often	18	6.844
Quite a bit	36	13.688
Almost all the time	30	11.407
Constantly	25	9.506

Capability

No answer	8	3.042
Not capable at all	47	17.871
Extremely limited	32	12.167
Not too good	15	5.703
Fairly good	57	21.673
Pretty good	52	19.772
Very good	48	18.251
Expert	4	1.521

Importance

No answer	9	3.442
Not needed	37	14.068
Only of minor importance	22	8.365
Somewhat important	22	8.365
Fairly important	44	16.730
Very important	43	16.350
Extremely important	50	19.011
Essential or critical	36	13.688

Obtained

No answer	9	3.13
Not applicable	67	23.26
OJT and/or experience	89	30.90
Undergraduate education	20	6.94
NPS education	7	2.43
Other graduate education	72	25.00
Part-time or short technical course	21	7.29
Other	3	1.04



17. Manpower and personnel models--to estimate effects of policy change on a personnel system, qualitative and quantitative methodology used to respond to changing requirements in size, composition, use, movement, and training of Navy personnel

Utilizing

No answer	4	1.521
Not at all	123	46.768
Only rarely	25	9.506
Sometimes	39	14.829
Moderately often	23	8.745
Quite a bit	21	7.985
Almost all the time	14	5.323
Constantly	14	5.323

Capability

No answer	6	2.281
Not capable at all	69	26.236
Extremely limited	44	16.730
Not too good	24	9.125
Fairly good	55	20.913
Pretty good	34	12.928
Very good	24	9.125
Expert	7	2.662

Importance

No answer	6	2.281
Not needed	59	22.433
Only of minor importance	18	6.844
Somewhat important	22	8.365
Fairly important	43	16.350
Very important	45	17.110
Extremely important	42	15.970
Essential or critical	28	10.646

Obtained

No answer	7	2.49
Not applicable	101	35.94
OJT and/or experience	103	36.65
Undergraduate education	9	3.20
NPS education	3	1.07
Other graduate education	41	1.42
Part-time or short technical course	13	4.63
Other	4	1.42

18. Determining planning variables such as end strengths, accession demands, force levels, and training pipeline management

Utilizing

No answer	2	0.760
Not at all	168	63.878
Only rarely	27	10.266
Sometimes	21	7.985
Moderately often	13	4.943
Quite a bit	9	3.422
Almost all the time	11	4.183
Constantly	12	4.563

Capability

No answer	6	2.281
Not capable at all	99	37.643
Extremely limited	50	19.011
Not too good	25	9.506
Fairly good	28	10.646
Pretty good	30	11.407
Very good	21	7.985
Expert	4	1.521

Importance

No answer	7	2.662
Not needed	81	30.798
Only of minor importance	22	8.365
Somewhat important	24	9.125
Fairly important	33	12.548
Very important	41	15.589
Extremely important	32	12.167
Essential or critical	23	8.745

Obtained

No answer	8	2.97
Not applicable	132	49.07
OJT and/or experience	89	33.09
Undergraduate education	4	1.49
NPS education	2	0.74
Other graduate education	20	7.43
Part-time or short technical course	10	3.72
Other	4	1.49

19. Determining the short and long term effects of manpower personnel or training management policies

Utilizing

No answer	3	1.141
Not at all	111	42.205
Only rarely	38	14.449
Sometimes	29	11.027
Moderately often	18	6.844
Quite a bit	26	9.886
Almost all the time	21	7.985
Constantly	17	6.464

Capability

No answer	7	2.662
Not capable at all	63	23.954
Extremely limited	39	14.829
Not too good	29	11.027
Fairly good	45	17.110
Pretty good	37	14.068
Very good	35	13.308
Expert	8	3.042

Importance

No answer	8	3.042
Not needed	54	20.532
Only of minor importance	14	5.323
Somewhat important	17	6.464
Fairly important	44	16.730
Very important	43	16.350
Extremely important	57	21.673
Essential or critical	26	9.886

Obtained

No answer	8	2.97
Not applicable	132	49.07
OJT and/or experience	89	33.09
Undergraduate education	4	1.49
NPS education	2	0.74
Other graduate education	20	7.43
Part-time or short technical course	10	3.72
Other	4	1.49

20. Analysis and development of effective productivity enhancement programs

Utilizing

No answer	4	1.521
Not at all	162	61.597
Only rarely	25	9.506
Sometimes	17	6.464
Moderately often	15	5.703
Quite a bit	24	9.125
Almost all the time	9	3.422
Constantly	7	2.662

Capability

No answer	7	2.662
Not capable at all	88	33.460
Extremely limited	51	19.392
Not too good	28	10.646
Fairly good	34	12.928
Pretty good	31	11.787
Very good	20	7.605
Expert	4	1.521

Importance

No answer	8	3.042
Not needed	66	25.095
Only of minor importance	20	7.605
Somewhat important	34	12.928
Fairly important	38	14.449
Very important	46	17.490
Extremely important	36	13.688
Essential or critical	15	5.703

Obtained

No answer	8	2.95
Not applicable	122	45.02
OJT and/or experience	87	21.10
Undergraduate education	6	2.21
NPS education	3	1.11
Other graduate education	37	13.65
Part-time or short technical course	5	1.85
Other	3	1.11

## APPENDIX J

### SUMMED PERCENTAGE OF RESPONSES 5, 6, AND 7

ACTIVITIES	SUMMED PERCENTAGE OF RESPONSES (5,6,7)
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#### THE LEAST IMPORTANT

9    Computer Based Statistical Analysis	utilizing        6 capable         14 importance      31
10   Statistical Methods for Analyzing Manpower	utilizing        7 capable         20 importance      30
12   Accounting	utilizing        6 capable         13 importance      33
13C Resource Allocation	utilizing        5 capable         10 importance      31
15   Market Analysis	utilizing        7 capable         11 importance      24

#### THE MOST IMPORTANT

5A   Basic Management Principles	utilizing        92 capable         92 importance      97
5B   Organizational Structure	utilizing        78 capable         81 importance      90
5C   Individual and Group Behavior	utilizing        89 capable         90 importance      97
6B   Assignment, Development Education and Training	utilizing        71 capable         90 importance      90



6D	Performance Appraisal	utilizing	74
		capable	93
		importance	92

MODERATELY LOW

8	Nursing Research	utilizing	5
		capable	32
		importance	40
11	Health Policy	utilizing	14
		capable	21
		importance	39
18	Determining Planning Variables	utilizing	12
		capable	21
		importance	37
20	Productivity Enhancement	utilizing	15
		capable	20
		importance	37

MODERATELY HIGH

1	Nursing Theory	utilizing	59
		capable	89
		importance	76
2	Technical Writing	utilizing	70
		capable	70
		importance	83
4A	Staffing, Staff Development, Patient Classification	utilizing	55
		capable	90
		importance	79
4B	Nursing Organizational Structure, Evaluation, Quality Assurance	utilizing	65
		capable	85
		importance	79
5D	Job Analysis	utilizing	49
		capable	64
		importance	78
5E	Job Design	utilizing	55
		capable	76
		importance	75

RATINGS OF LESSER SIGNIFICANCE

3	Computer programming techniques	utilizing	20
		capable	15
		importance	49
4C	Nursing service budget	utilizing	28
		capable	51
		importance	63
4D	Labor relations and health law	utilizing	26
		capable	41
		importance	59
6A	Acquisition, recruiting, selection of military personnel	utilizing	21
		capable	63
		importance	60
6C	Retention, compensation, pay level structure, and retirement	utilizing	23
		capable	44
		importance	54
7	Strategic planning	utilizing	39
		capable	57
		importance	70
13A	Accounting concepts, cost accounting, budget development	utilizing	14
		capable	22
		importance	50
13B	Cost-benefit analysis, cost analysis for decision making, capital budgeting	utilizing	12
		capable	18
		importance	43
14	Economic decision making	utilizing	25
		capable	30
		importance	47
16	Problem-solving and decision-making models	utilizing	35
		capable	40
		importance	49
17	Manpower and personnel models	utilizing	19
		capable	25
		importance	44
19	Determining policy effects	utilizing	24
		capable	30
		importance	48

# APPENDIX K

## POSITION GAP ANALYSIS

### THE LEAST IMPORTANT

#### COMPUTER BASED STATISTICAL ANALYSIS

##### ACTIVITY 9

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Director Nursing Service	4%	11%	29%
Quality Assurance Coordinator	3%	13%	34%
Recruiters	6%	13%	31%
Hospital Staffing Detailers	0	0	25%

#### STATISTICS FOR MANPOWER

##### ACTIVITY 10

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Department Heads	5%	9%	34%
Hospital Staffing Detailers	0	0	75%
Charge Nurses	0	0	40%

#### ACCOUNTING

##### ACTIVITY 12

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Assistant Director Nursing Service	0	9%	36%
Department Head	9%	16%	41%
Clinic Nurse	4%	14%	36%
2XXX	0	17%	33%
Other	6%	11%	44%

#### RESOURCE ALLOCATION

##### ACTIVITY 13C

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Recruiters	6%	19%	38%
2XXX	11%	22%	44%
Other	11%	17%	44%

# MARKET ANALYSIS

## ACTIVITY 15

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Assistant Director Nursing Service	9%	18%	36%
Detailers	33%	67%	100%
2XXX	6%	39%	33%

## THE MOST IMPORTANT

### ORGANIZATIONAL STRUCTURE

#### ACTIVITY 5B

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Department Head	66%	73%	86%
Charge Nurse	53%	73%	73%

### ASSIGNMENT, DEVELOPMENT, EDUCATION AND TRAINING

#### ACTIVITY 6B

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Recruiters	56%	81%	81%
Quality Assurance Coordinator	40%	80%	83%
Charge Nurses	67%	87%	100%
2XXX	44%	78%	72%

### PERFORMANCE APPRAISAL

#### ACTIVITY 6D

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Recruiters	56%	88%	100%
Quality Assurance Coordinator	30%	93%	77%
Educational Coordinator	65%	88%	95%
2XXX	50%	100%	78%

## MODERATELY LOW

### NURSING RESEARCH

#### ACTIVITY 8

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Director Nursing Service	4%	32%	44%
Assistant Director Nursing Service	9%	18%	32%
Department head	0	31%	39%
Educational Coordinator	0	18%	35%
Detailers	33%	100%	100%
Charge Nurses	0	13%	40%
Clinic Nurses	4%	25%	39%
2XXX	6%	61%	44%

# HEALTH POLICY

## ACTIVITY 11

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Director Nursing Service	7%	21%	36%
Assistant Director Nursing Service	9%	9%	36%
Department Heads	5%	14%	34%
Quality Assurance Coordinators	17%	27%	47%
Detailers	67%	100%	100%
Clinic Nurses	14%	21%	46%

# DETERMINING PLANNING VARIABLES

## ACTIVITY 18

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Recruiters	31%	44%	63%
Clinic Nurses	14%	21%	50%
2XXX	22%	33%	56%

# PRODUCTIVITY ENHANCEMENT

## ACTIVITY 20

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Assistant Director Nursing Service	9%	36%	36%
Recruiters	38%	31%	63%
Charge Nurses	0	0	33%

## MODERATELY HIGH

# NURSING THEORY

## ACTIVITY 1

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Recruiters	0	100%	69%
Quality Assurance Coordinator	40%	90%	77%
Educational Coordinator	41%	94%	76%

# TECHNICAL WRITING

## ACTIVITY 2

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Director Nursing Service	67%	86%	96%



# NURSING STAFFING

## ACTIVITY 4A

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
2XXX	17%	94%	61%
Recruiters	6%	75%	44%
Quality Assurance Coordinator	13%	87%	57%

# NURSING ORGANIZATIONAL STRUCTURE

## ACTIVITY 4B

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Recruiters	0	69%	44%
Quality Assurance Coordinator	7%	97%	83%
Educational Coordinator	24%	82%	65%

# JOB ANALYSIS

## ACTIVITY 5D

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
2XXX	50%	78%	83%
Director Nursing Service	57%	29%	89%
Quality Assurance Coordinator	47%	63%	80%
Detailers	67%	100%	100%
Charge Nurses	7%	27%	47%

# JOB DESIGN

## ACTIVITY 5E

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
2XXX	44%	72%	72%
Director Nursing Service	46%	79%	75%

# RATINGS OF LESSER SIGNIFICANT

## ACQUISITION, RECRUITING, SELECTION OF MILITARY PERSONNEL

## ACTIVITY 6A

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
Director Nursing Service	18%	82%	61%
Assistant Director Nurs- ing Service	0%	64%	45%
Department Heads	11%	61%	64%
Quality Assurance	7%	47%	57%
Education Coordinators	23%	59%	59%
Charge Nurses	7%	47%	60%

ACCOUNTING CONCEPTS, COST ACCOUNTING, BUDGET DEVELOPMENT  
ACTIVITY 13A

POSITION	UTILIZING	CAPABILITY	IMPORTANCE
2XXX	6%	17%	44%
Director Nursing Service	18%	25%	54%
Assistant Director Nursing Service	18%	18%	64%
Department Head	13%	19%	66%
Charge Nurse	7%	7%	47%
Clinic Nurse	7%	21%	46%

APPENDIX L

POSITIONS IDENTIFIED AS "OTHER"

Assistant to Director Navy Nurse Corps  
Administrative Assistant Director Nurse Corps  
Director, Officer Indoctrination School  
Career Plans Officer--Nurse Corps  
Health Care Planning Analyst  
Commanding Officer, Naval School of Health Sciences  
Special Assistant for Recruiting and Retention  
Senior Level Leadership and Management Education and  
Training Course Instructor  
Coordinator Staff Development  
Staff Development  
Basic "A" School Director  
Special Projects Officer  
Special Assistant to CO for Congressionals and Patient  
Satisfaction  
Special Staff Officer to the CO Company Commander  
Manpower Advisor  
Chief Nurse Hospital Corps School  
Facility Design Nursing Advisor for Construction  
Position Identified only as "Admin"

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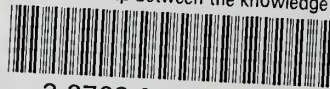
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